

NQ-92021

NorthQ Power Reader



Figure 1 product picture

Product Overview

The advertisement features a green background. On the left, a NorthQ device is shown installed on a mechanical electricity meter. The meter has a yellow display showing '211652' and 'KILOWATTHER'. A white cable connects the NorthQ device to the meter. In the center, the text 'Save up to 25% on your electricity bill' is displayed in large white font, with 'Retro fit kit for existing mechanical and electronic meters' in smaller white text below it. On the right, a smartphone screen displays the NorthQ app interface. The app shows a line graph of electricity consumption over time (07:45 to 11:00), a digital display of '00023179' with 'WATT' below it, and a status bar at the bottom with 'RSS feed', a Wi-Fi icon, a battery icon, and a signal strength icon.

Power Manager

- Save up to 25% of your power bill
- Keep track of your electricity consumption
- Locate power hungry appliances and eliminate standby power
- Manage your electricity budget
- Visualizes current wattage consumption
- Compare consumption with other households
- Set & Receive energy alarms
- Post your savings on Facebook and Twitter
- Fits 98% of all power meters on the market
- Easy installation with video guide

NorthQ has developed a small Power Reader that can be easily installed on existing electronic or mechanical meters in order to visualize electricity consumption in private homes. The meter reading solution is based on the Z-Wave wireless standard, which is ideal for controlling automation products within the home.

The product consists of 3 parts: a Power Reader, a battery-powered wireless transmitter and a USB receiver. Electricity data is transferred to a chosen PC every 15 minutes, where it can then be visualized in the form of graphs, enabling customers to keep track of their electricity consumption (in kWh and in local currency), and monitor their CO2 emissions, etc. It is also possible to receive real-time measurements in order to investigate how much each individual appliance uses in active or standby mode.

Furthermore, it is possible to enter a budget for how much you want to consume in EUR or kWh per year. The NorthQ eGadget on the screen continuously monitors and updates the electricity consumption data to indicate whether you are under or over budget. You are then able to compare your electricity consumption in the current year with that in previous years. It is also possible to compare the consumption in your current home with other types of homes, e.g. apartments, houses, villas, etc.

Our ongoing development will later allow the Power Reader solution to be used in conjunction with the portal  MyEnergyreadings.com to get an overview of your total energy consumption and thus enable you to manage your home in a more energy efficient way. Apart from the obvious financial benefits, this solution enables you to play a part in the global efforts to improve our environment through the reduction of CO2 emissions.

eGadget smart features



1. Power consumption eGadget

The graph illustrates your power consumption registered by the eGadget on 15 minutes, hourly or daily interval. You can toggle between them by clicking on the graph. Below the graph the date and time of the last reading are displayed. Make sure that your last reading is not older than 60 days.

2. Current consumption

The counter displays the current power consumption in watt. It can be toggled by clicking on **WATT** to display the total power consumption in kWh.

3. RSS feed

The NorthQ eGadget displays continuous headlines from news sources depending on your choice of language. To read the full story, simply click on the text.

4. Status

This status bar will display important notifications. When any updates are available the following icon  appears in the right lower corner of the eGadget. To update your device and/or the eGadget software simply click on the icon in order to download and install latest software version. When the sensor is in real-time mode the meter reading will be transferred to the USB stick every 5 seconds. This mode is also used for updating the sensor unit with new software. The icon  will appear once the device is in real-time mode.

5. Help

If you have any questions or problems with your device or eGadget software, click on the icon. This button will open your browser and will take you to the NorthQ's support homepage (FAQ).

6. Advance settings

Click here in order to make changes to the values you entered during the installation or to access the advance settings menu.

7. The close button and the minimize button

If you do not want to see the eGadget all the time on your screen, then you can close or minimize it. The eGadget can be opened at any time without data loss.

8. Detailed graph

To see detailed information about your power consumption open the graph.

9. Statistics

By clicking on the icon you can follow your electricity consumption and compare it to other types of homes, e.g. apartments, houses, villas etc. You can select a period of time for which you can make the comparison.

10. Battery level

The mouse-over feature of the battery icon will show you the exact battery level in percentage. If the battery level is too low it will flash red and indicate it's time to exchange batteries.

Power Manager

1. The detailed graph



The graph illustrates the power consumption registered by the Power Reader on 15 minutes, hourly or daily interval. You can toggle between them by changing the period in the drop-down box on the right. Additionally you can navigate between older or newer readings.

You can change what the graph displays by selecting various data series and keep track of the power consumption in kWh, EUR or CO₂. Further you can decide how many values (bars) you wish to display in the graph by entering a certain number in the "Show" field.

2. Savings/overuse

In this section the Power Manager can keep track of your savings. It displays how much you have consumed in kWh, in Euro (or local currency) or how much CO₂ emission was produced. A comparison table visualizes your savings or over consumption in comparison with other household owners. A red background will appear if you have surpassed the average consumption for the given type of housing.

3. RSS feed

The RSS feed displays news from your country. The feed can be changed or disabled.

4. Export to Excel

Power Manager offers export function to excel (.csv file).

5. Statistics

Power Manager can display different data series in the graph in order to compare your consumption. You are able to select: villas, apartments, second homes, national average, your own average or your own budget goal.

6. Calendar

If you would like to see the consumption for a specific day you can click on the date in the calendar and it will be shown in the graph. It's also possible to select a specific time during the day.

7. Social networking websites

Power Manager can post your savings on Facebook and Twitter. A window will appear to help you decide which information you wish to post. Additionally, you can select the language you wish to use for sharing.

8. Alarms

This tab allows you to set or view any energy alarms or notifications regarding your power consumption.

9. Forecasted electricity bill

The tab visualizes your forecasted electricity bill based on your own average consumption since installation. Further, the graph will visualize if you are on track with your budget or in which month your budget is expected to run out.

10. Main graph

The main tab will show you all the features mentioned above.

11. Period and Units

It is possible to select and display different time intervals. You can choose between quarterly/ hourly/ daily/ monthly or yearly interval. Period allows you to visualize savings in your own currency, kWh or CO₂.

Technical specifications

Kit contains:

- 1x USB Z-Wave stick
- 1x Power Reader
- 1x 5 meter sensor cable
- 1x PC-software
- 2x Installation template
- 2x AA alkaline batteries
- 1x Mounting kit
- 1x Quick installation guide

Minimum System Requirements:

- Processor: Single Core 1 GHz
- RAM: 1 GB
- HDD: 100 MB free space
- Screen: 800x600 pixels

Wireless communications

- Frequency: 868.42 MHz(EU)
- Wireless range: 25-35 meter indoor / 50-110 meter outdoor

Sensor Supports

- EU Z-Wave (5.03) RF version
- Mechanical (Ferraris type), electronic and infrared meters
- Wireless firmware update
- Wake-up time:
 - Preset to 15 min. interval
 - Selectable wake-up intervals:
 - 15, 30, 45 minutes
 - 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12 hours
 - 1, 2, 3, 4, 5, 6 days
 - 1, 2, 3, 4 weeks
 - 1 month
- Z-Wave certified
- CE certified (88/378/EEC, 2004/108/EC, 2006/95/EC directive)

USB stick Supports

- EU Z-Wave (4.54) RF version
- Z-Wave certified
- USB 2.0
- Wireless range: 25-35 meter indoor / 50-110 meter outdoor
- Tri-color LED
 - red – no service detected
 - green – transmitting & receiving meter data
 - blue – waiting for connection

Software Requirements

- XP / VISTA / WINDOWS 7
- WINDOWS 8 (requires .net framework 3.5 along with 4.5)
- Adobe Air 2.9 or higher (will be installed along with the PC-software)
- .Net framework 3.5 sp1 or higher

Battery lifetime

- Mechanical meters: min.10 months w/15 minutes interval wakeup time
- Electronic meters : min. 15 months w/15 minutes interval wakeup time

Specifications

- Detachable 5 meter sensor cable for increased transmission range
- Weatherproof (both wireless transmitter and sensor cable)
- Wall mount bracket & installation accessories included
- One button for pairing, un-pairing, real-time mode, range test, calibration and reset
- LED to indicate: pairing, un-pairing, real-time mode, range test, calibration, reset, pulse counts
- 512Kb EEPROM (equivalent to 3 months storage stored every 15 minutes).
- Real-time clock

Z-wave Command Classes Supported

- COMMAND_CLASS_METER
- COMMAND_CLASS_METER_TBL_MONITOR
- COMMAND_CLASS_FIRMWARE_UPDATE_MD
- COMMAND_CLASS_BATTERY
- COMMAND_CLASS_BASIC
- COMMAND_CLASS_CONFIGURATION
- COMMAND_CLASS_CRC_16_ENCAP
- COMMAND_CLASS_MANUFACTURER_SPECIFIC
- COMMAND_CLASS_TIME_PARAMETERS
- COMMAND_CLASS_WAKE_UP

- COMMAND_CLASS_TIME

Operating Conditions

- Operating Temperature Range: 0 ~ 50°C
- Operating Humidity Range: 20 ~ 90%
- Storage Temperature Range: -20 ~ 70°C
- Storage Humidity Range: 15 ~ 95%
- Weather proof

Product Size:

- Sensor: L*W*T = 28.6 * 26.6 * 9.1 mm
- Main Unit: L*W*T = 93 * 75 * 34.6 mm

Images



Figure 2 Mechanical meter

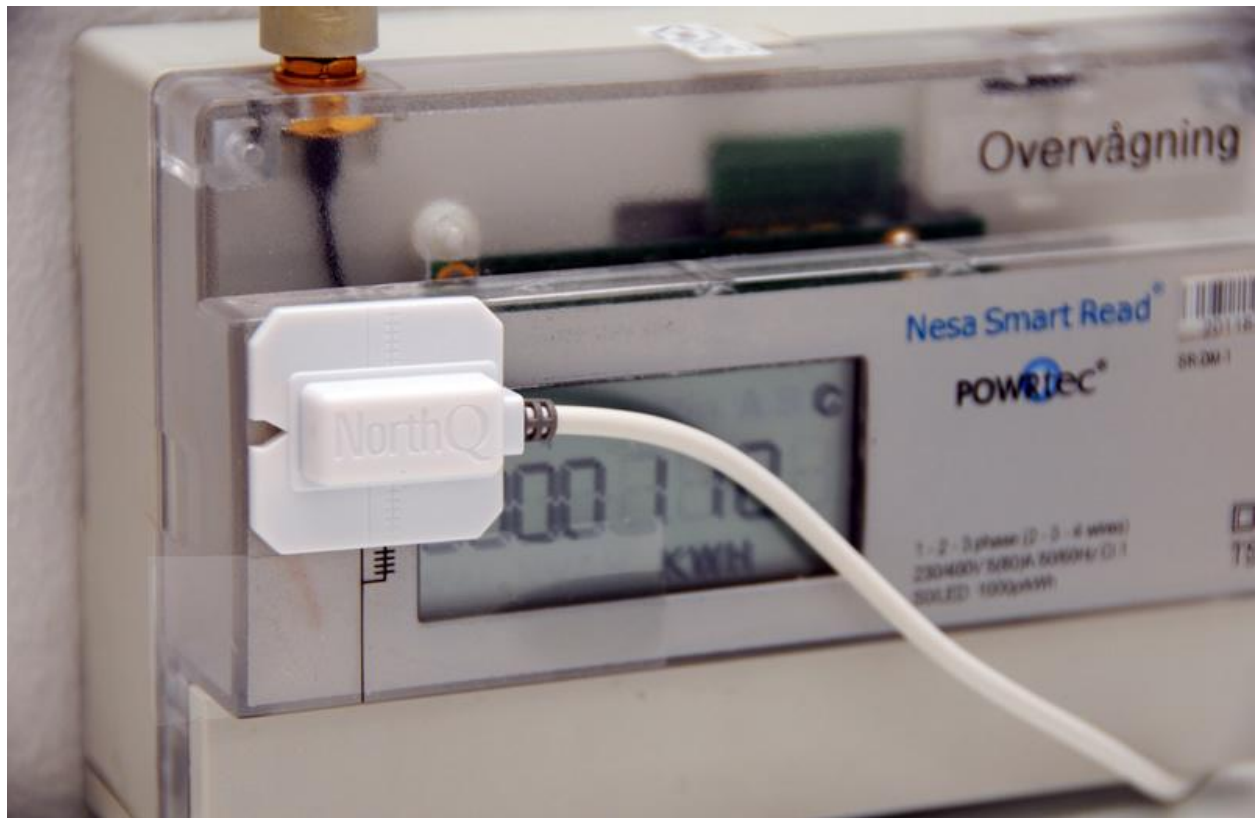


Figure 3 Electronic meter

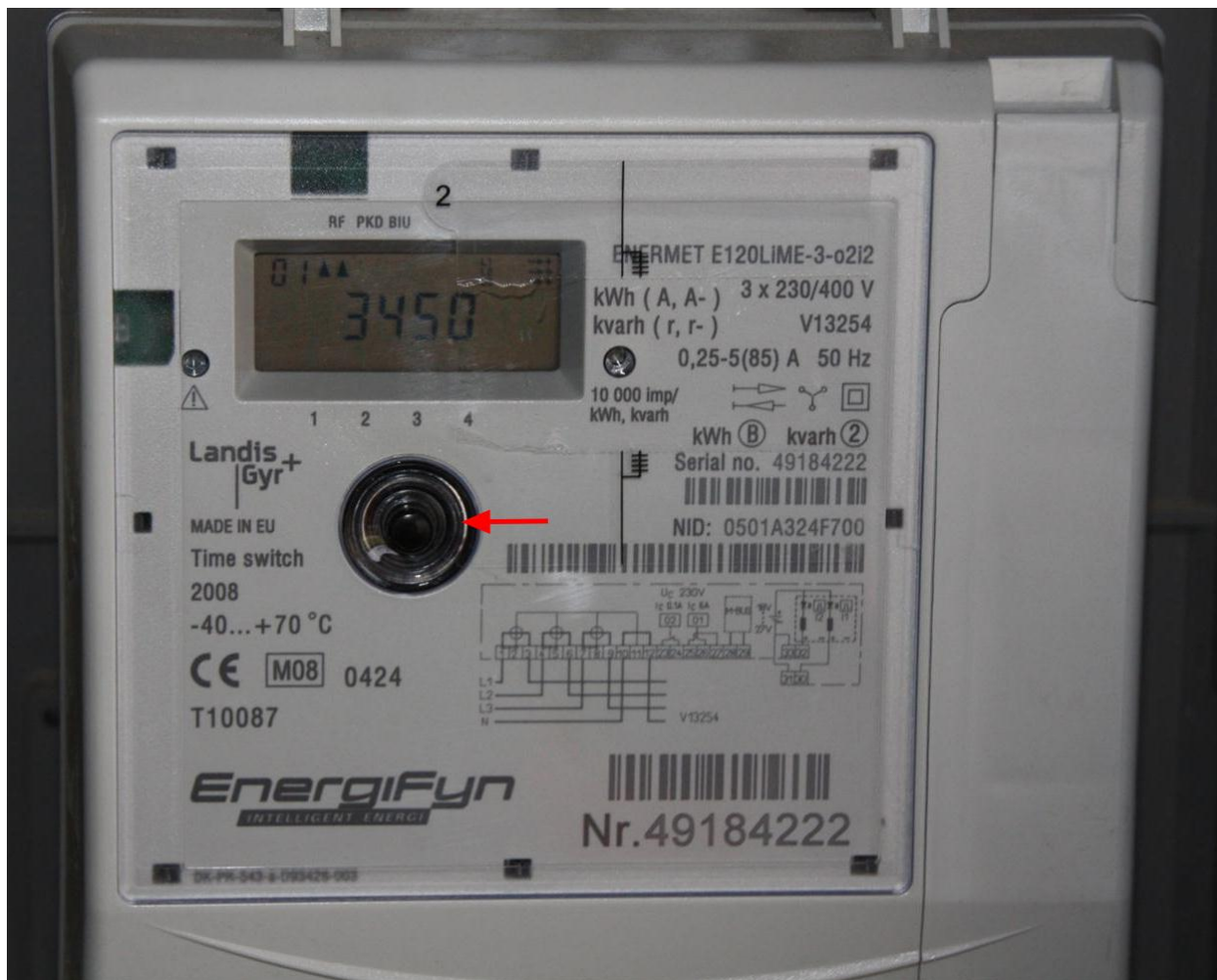


Figure 4 Electronic meter with infrared port



Figure 5 USB stick



<http://youtu.be/UICEpJ46oCc?t=18s>



Figure 6 NorthQ PowerReader mounted on a mechanical meter



Figure 7 NorthQ PowerReader mounted on an electronic meter



Figure 8 retail package (front)

