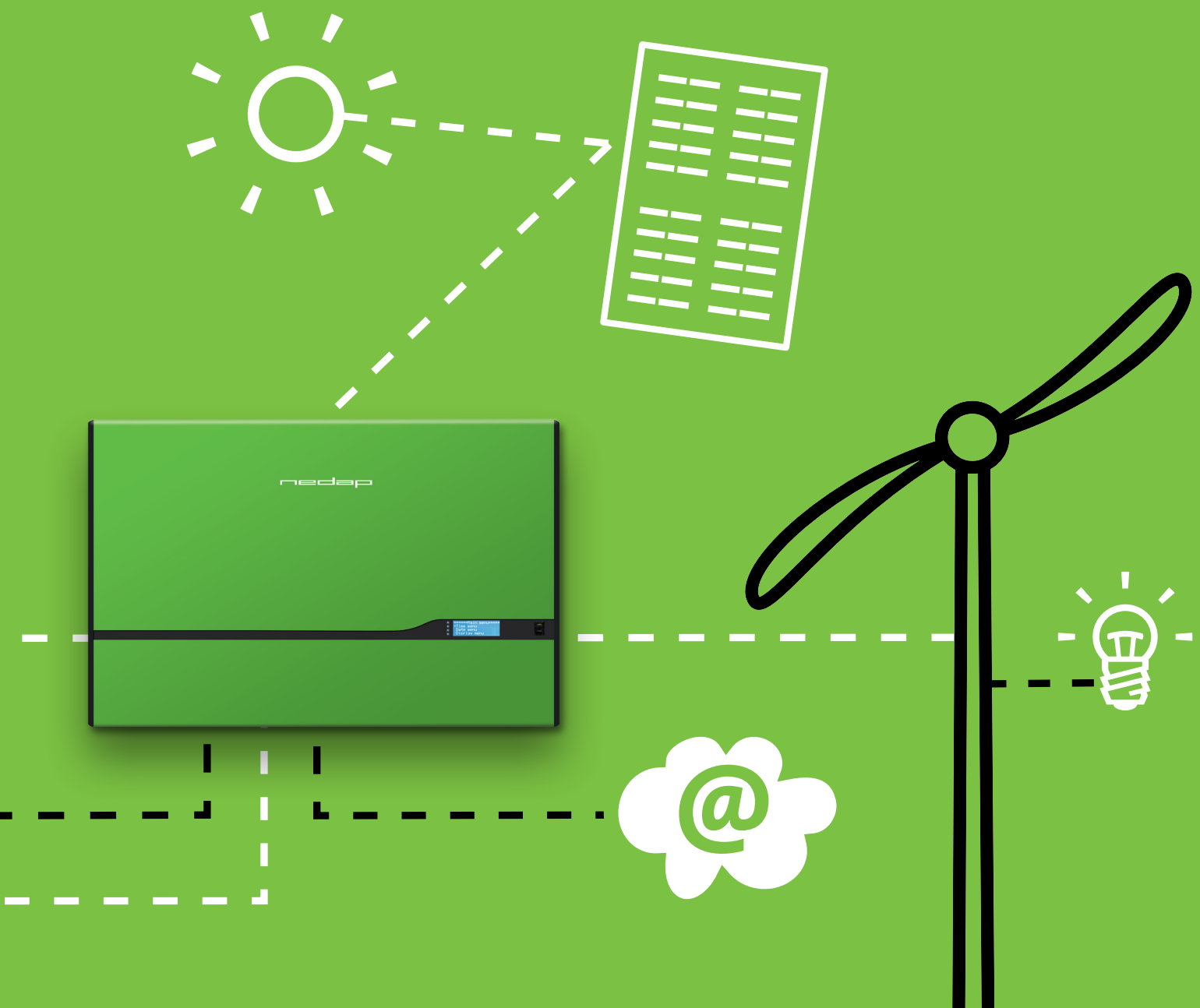
the PowerRouter

you're **in charge**



Discover the PowerRouter

The Next Step in Inverter Technology!

The PowerRouter combines energy from various renewable sources, routing energy bi-directional when and where it is needed, i.e. to battery storage, grid, generator or consuming devices. Route power for industrial or residential supply with ease!

Freedom. Combine various renewable sources.

Intelligent. Manage and maximize battery storage and life.

Control. Monitor and manage power remotely through the Nedap web portal.

Effortless. A compact, lightweight and easy to install ‘all-in-one solution’.

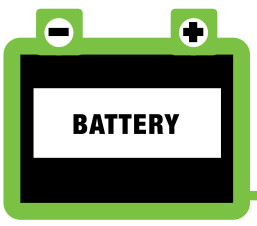
Dependable. Uninterrupted power to ensure continuous operation.

Independence. Rely on the PowerRouter even when grid use is unavailable or not applicable.

PowerRouters optimize energy you feed into the grid, can become a green power backup, and even create a full autonomous clean power generator.

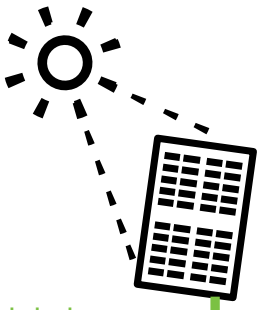
Independently manage and control your own energy!

…you’re **in charge!**



Discover the PowerRouter

The Next Step in Inverter Technology!



With decentralized energy sources a major issue is combining multiple sources in one system. Combining solar with a small wind turbine and batteries requires many separate inverters, chargers and equipment creating a mess of wiring.

Going Beyond Inverter Technology

Engineering a complex system normally requires expertise and planning. Where a simple inverter can only provide one energy function, the PowerRouter makes it easy to combine sun and wind power, as well as storage to one decentralized system. Simply connect them to the PowerRouter.

The unique Power Backbone technology manages the characteristics of various energy sources with optimum performance. By way of example, power generated from solar PV panels is stable during daylight, as opposed to a wind turbine generating varying power levels. The PowerRouter chooses the best configuration instantly according to each situation, providing constant uninterrupted power. In addition, the PowerRouter's battery manager increases battery life, by monitoring their charge and health using advanced algorithms.

Example PowerRouter applications

- Generate and store electricity in locations where no grid is available.
- A telecommunications site or oil rig will greatly benefit from this device. Also use PowerRouters in houses or farmland in remote locations.
- Continuous provision of renewable backup facilities by combining solar power with storage in batteries, great for offices or data centers. Especially useful where power outages are common.

Connect & Grow

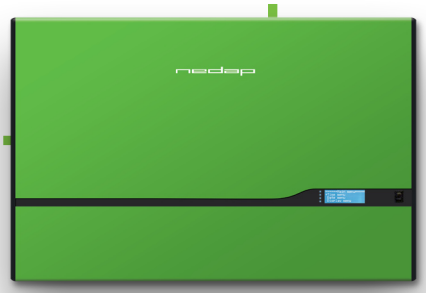
PowerRouters are versatile, available in many variations. Expand your existing PowerRouter installation. E.g., expand solar with battery storage or a wind turbine by simply adding modules to the PowerRouter.

Installation is as easy as One, Two, Three!

This system is a sleek lightweight device, wall mounted by one person with "plug and play" simplicity: 1) Fasten the mounting strip to the wall. 2) Hang the unit, which will snap and lock into place. 3) Connect cables to terminals which are neatly arranged and accessible on one side.

Monitor system performance from any location

The PowerRouter comes equipped with a display. Onboard TCP/IP facilities make it easy to monitor and manage PowerRouters remotely via the internet. Dealers, installers, utilities and other stakeholders can have access to customer's installation data ensuring excellent service and support.



Specifications **PowerRouter PR 50**

Solar module	
Solar Voltage	**100 - 600 Vdc, + 5%**
MPP voltage	**100 - 450Vdc**
Max. input	**5,5 kW, 2 x 15A (6 kWp)**
MPP efficiency	**99.9% (EU method)**
No. of inputs	**2, may be connected in parallel**
No. of MPP trackers	**2**
Battery module	
Battery Voltage	**18 – 32 Vdc**
Charge Current	**Adjustable, Max. 125 A dc continuous**
Battery capacity	**Adjustable, Min. 150 Ah at. Max. charge current**
Charging curve (cyclic)	**Adaptive 4-stage + maintenance charge**
Compatible Battery Types	**Wet, Gel, AGM, Li-Ion**
Grid module	
Output Voltage	**230Vac ± 10%**
Frequency	**50 Hz + 0.2 Hz**
Output wave	**True sine wave, max. 5% distortion**
Continuous Output Power (up to 40 ºC ambient)	**5000W**
Peak power (@ Unom)	**2 x Pnom, 5 sec.**
Multi purpose relay	**2 NO/NC, user programmable, 250 Vac, 1 A; 24 Vdc, 5 A**
Wind module	
Generator type	**Permanent Magnet, 3 phase**
Generator input Voltage	**0 – 280 Vac, 3- phase**
Generator input Frequency (electric)	**0 – 60 Hz**
Generator input current	**0 – 12 A**
Continues power	**5000W**
MPPT	**Custom made**
Sampling frequency / Reaction time	**… msec. (TBD)**
Brake current	**100Ap**
System	
Efficiency per module	**> 96%**
No load / standby power consumption per module	**< 18W / < 2W**
Connectivity	**TCP/IP, to be monitored & managed via MyGrid web portal**
Operating Temperature Range (full power)	**0 ºC to 40 ºC (derating at temperatures from 40 ºC to 60°C)**
Regulatory Approvals and Standards	**CE**
Anti- islanding protection	**VDE 0126.1, G77, IEEE929**
Safety	**EN 60335-1, EN 60335-2-29, EN 60950-1, EN 61400-2**
Emission	**EN 55014-1, -2, EN 61000-3-2, 3, EN 61000-6-2, -3**
Immunity	**EN 55014-2**
Mechanical	
Degree of protection	**IP 23 (indoor, dust free, rain protected)**

Extension module	**2 modules**	**3 Modules**
Dimensions (W, H, T) mm	**280 x 505 x 147**	**765 x 505 x 147**	**986 x 505 x 147**
Weight	**8 kg**	**15 kg**	**20 kg**

Specifications are subject to change without notice.

Nedap builds on decades of experience in the field of power electronics and power conversion. Established in 1929 and quoted on the Euronext stock exchange since 1947, Nedap is a reliable and strong Dutch company with subsidiaries worldwide, amongst which Belgium, France, Germany, Great Britain, Spain and Asia. Nedap is characterized by a development- and entrepreneurship-oriented open, innovative and creative culture.

the PowerRouter

Nedap Energy Systems

P.O. Box 101

7140 AC Groenlo

The Netherlands

T +31 (0)544 471 889

E www.thePowerRouter.com

I welcome@thePowerRouter.com