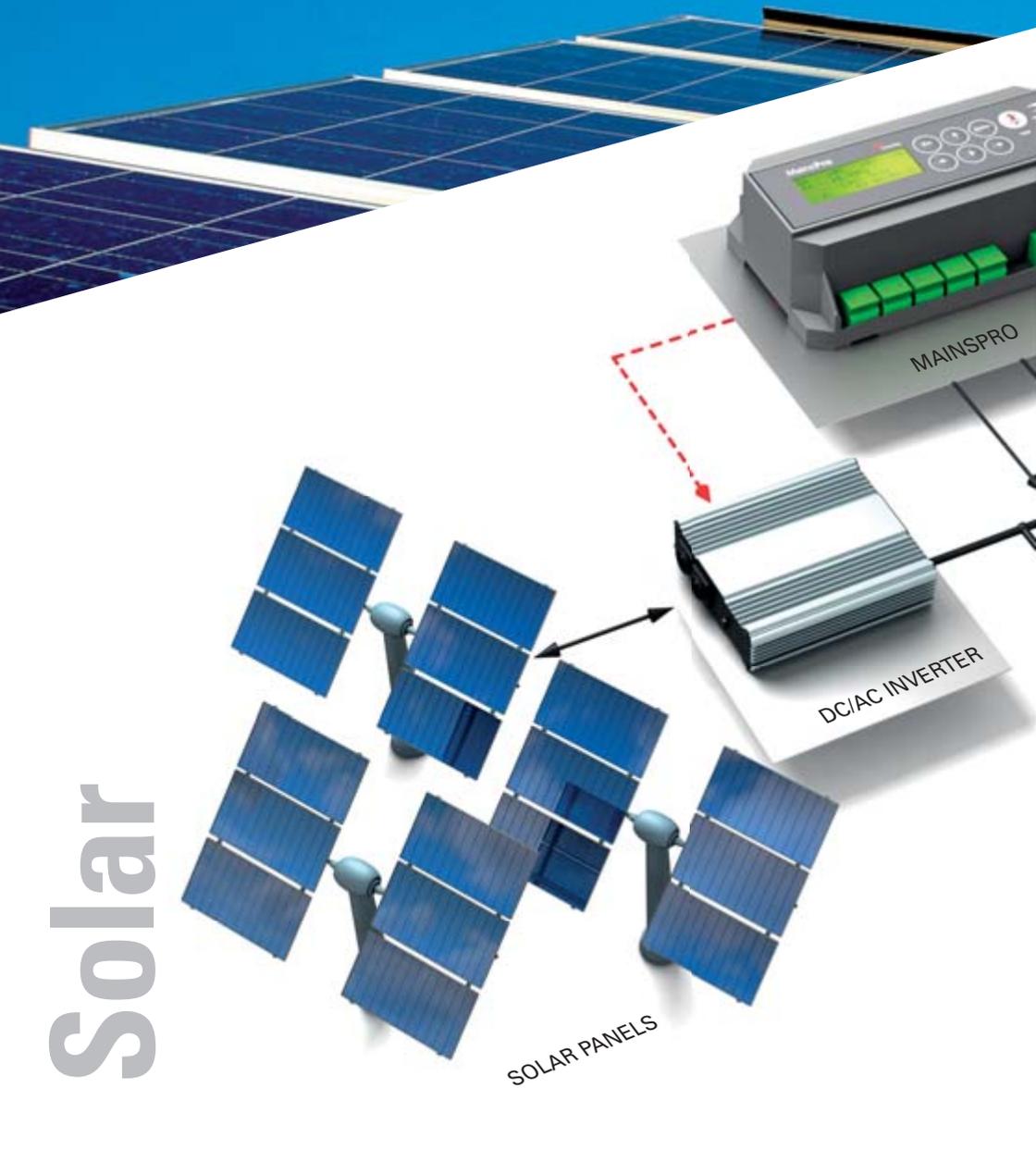


Mains Protection Relays



**Simple solutions to
secure your independent
power generation
applications.**

Solar panels are becoming an increasingly cost effective option for generating and supplying electricity for commercial applications and residential buildings. In both cases, operating the supply in parallel to the mains requires protection that meets the local utility supply standards. The ComAp mains protection products suit this energy source well, being easy to install and intuitive to use. And, with users infrequently on site or lacking technical knowledge, practical features such as automatic reset, remote information and reliable monitoring of basic functions help deliver a trouble-free operation.

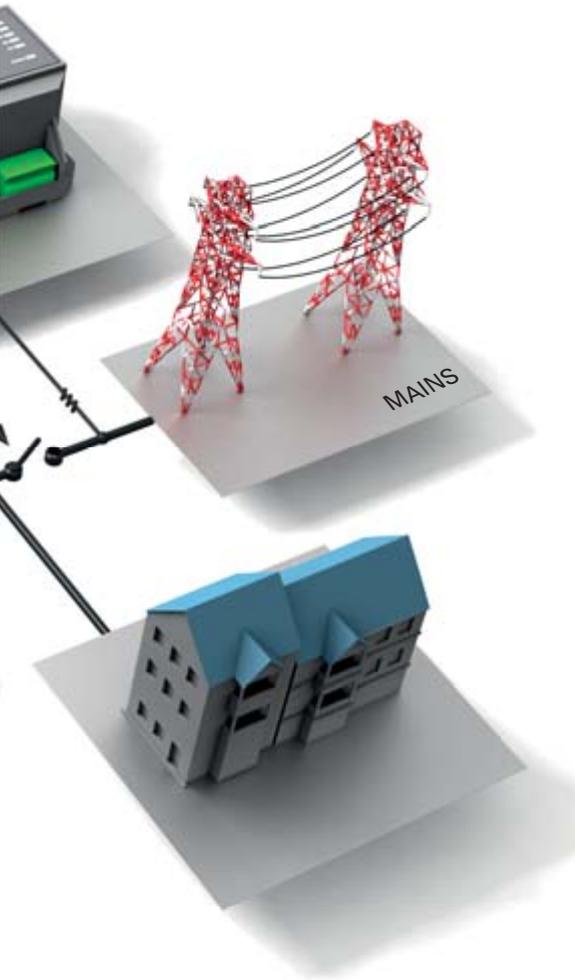


Solar

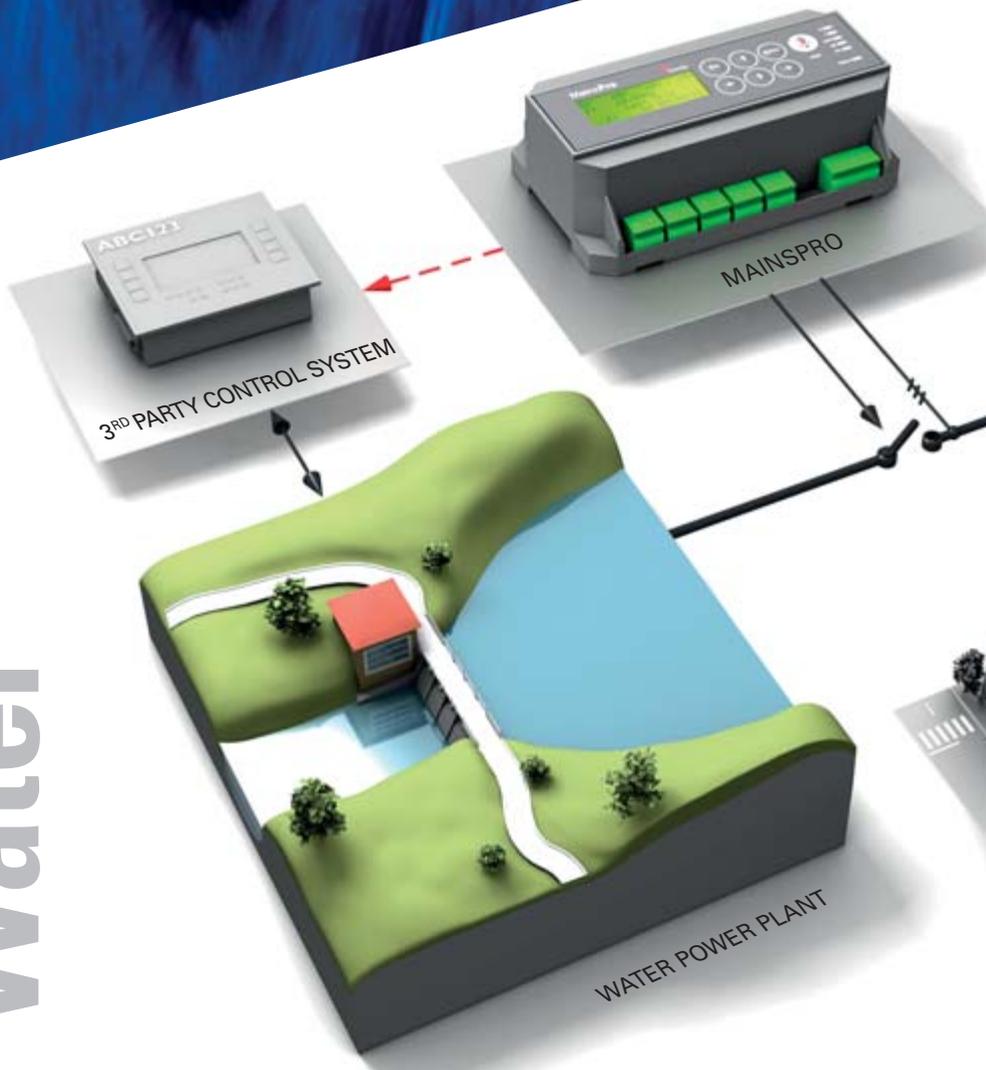
DOMESTIC RESIDENCE Slušovice, Czech Republic

The photovoltaic panels were installed on the south side of the roof at an angle of 30° by HiTechSolar. The installation includes 22 individual panels each measuring 1680 × 990 × 50 mm combined with a Solar Max 4200 C current inverter and ComAp's NPU* mains protection unit. The type of module used is SOLARWATT 220 Wp and delivers an output power of 5 kWp.

* see back cover of brochure



Over recent years a large number of mains protection systems have been commissioned for small to medium water power plants across Europe. With the principal purpose of generating electricity to the grid, ComAp DIN rail mounted protection modules have provided full protection for generators operating in these types of parallel-to-mains applications.



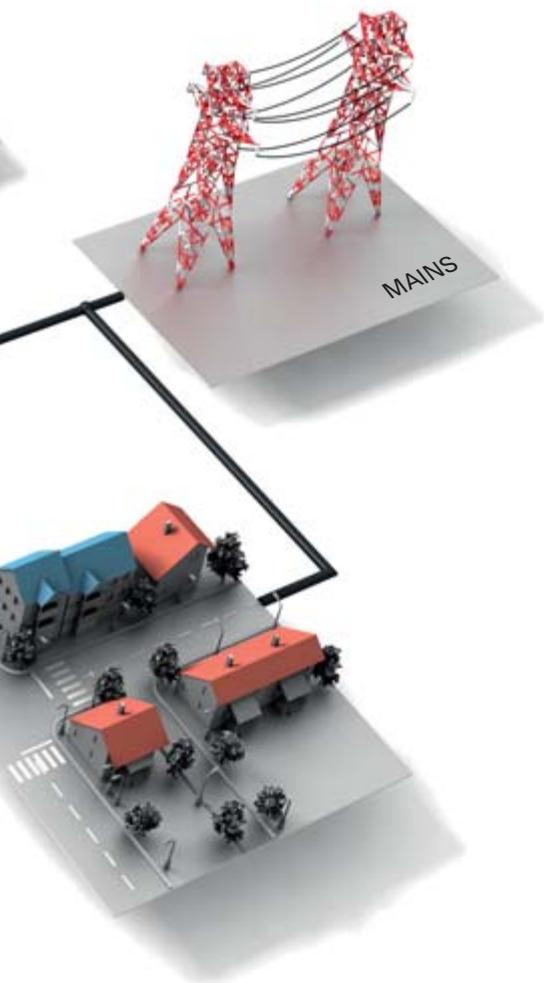
Water

WATER POWER PLANT

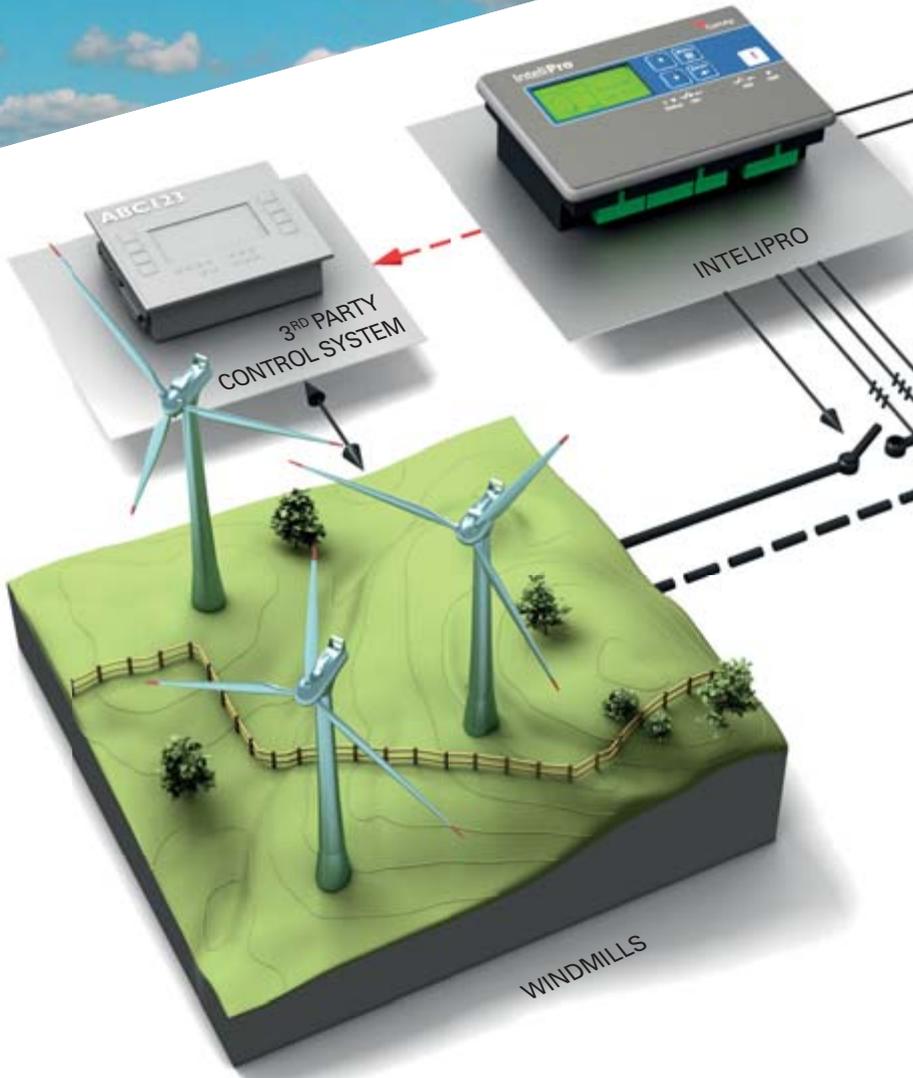
SMALL WATER POWER PLANT Zervești, Romania

ComAp mains protection products were chosen for a small water power plant Zervești, located in the Caras-Severin area of Romania, where two hydro-generator sets (incorporating a Banki turbine and a 800 kVA synchronous generator) provide a total output of 1600 kVA. The power is delivered to mains in permanent parallel operation with a NPU-FUV* unit used to protect parallel operation of each set, providing over/under voltage, over/under frequency, voltage asymmetry and vector shift protection. The electrical installation was made by Alva Strakonice. For installations of small water power plants it is possible to use also IntelliProtec*, a protection relay unit, to utilize a wider range of features.

* see back cover of brochure

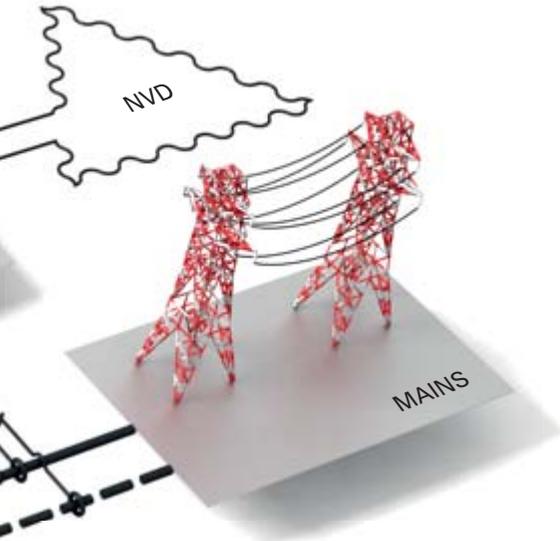


Large-scale wind farms supply direct to the electric power transmission networks, whilst smaller facilities are used to provide electricity in remote locations for individual homes and communities. Due to the isolated nature of wind power applications, effective communication with the controller and access to information remotely (using WebSupervisor) via a computer or smart phone makes ComAp IntelliPro an attractive protection solution.



Wind

Supports ComAp advanced communication technologies.



15 KW SCHOOL WINDTURBINE Cornwall, United Kingdom

The windmill application installed for a Cornish school features a 15 kW 3-phase turbine, generating at variable frequency, which is rectified then inverted to 50 Hz to allow connection to the mains grid. As the output for the windmill is above 16 amps per phase, a G59 panel between the inverter and mains is required which incorporates ComAp's NPU-FUV* protection unit.

* see back cover of brochure

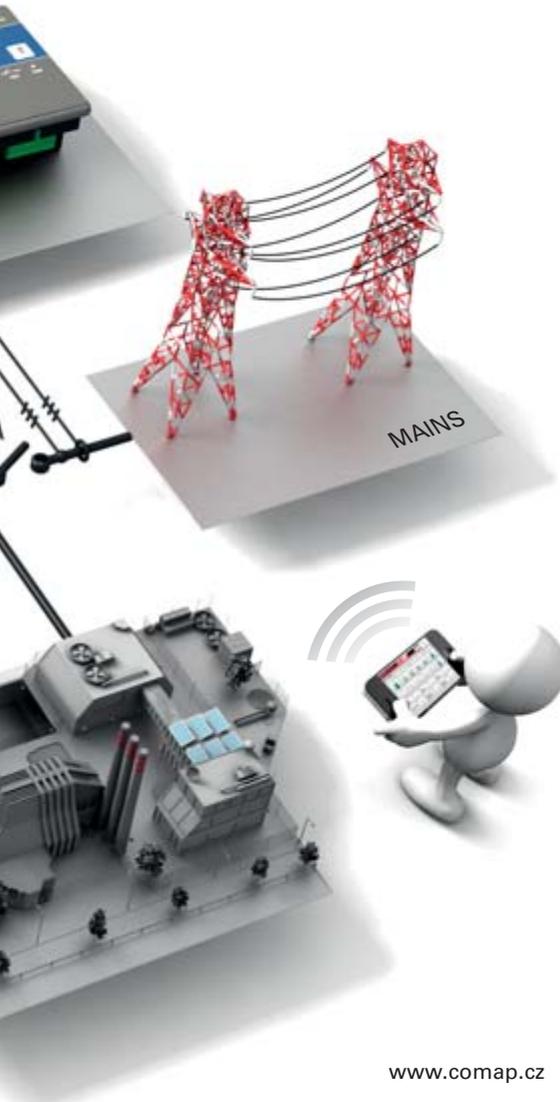


Mini cogeneration (CHP) installations between 5 - 500 kW_e in buildings or medium sized business, can take full advantage of a completely integrated range of mains protection products that operate seamlessly with dedicated generator controllers (measuring all values via CAN BUS) and displaying the whole installation on one screen using the free PC tool IntelliMonitor.

Cogeneration



Supports ComAp advanced communication technologies.



BIOGAS STATION Velký Karlov, Czech Republic

The biogas station is a source of renewable energy, generating 3×180 kW power, all of which is delivered and sold to the mains supply. The installation operates in parallel to mains mode and uses NPU*. It would also be possible, in a similar installation to use InteliProtec* unit.

* see back cover of brochure



“We have purchased 5 MainsPro units since the new model was released. We are very impressed with the new unit and plan to use many more on future projects.”



Hayden Smart
Control Systems
Engineer
www.pandds.com.au

Protections



MainsPro MAINS DECOUPLING RELAY

MainsPro is a protection instrument for mains-parallel applications, including generator sets, cogeneration, micro turbines or renewable energy sources such as photovoltaic plants or wind turbines. It provides adjustable voltage, frequency and loss of mains protections to safeguard both the power supplier and the generators.




WebSupervisor


AirGate
simple connected

InteliPro UTILITY PROTECTION RELAY

InteliPro is a highly flexible interconnection/mains decoupling protective relay. It is applicable for G59/2, IEEE 1547 requirements, and with extensive protective functions, it meets the strictest utility interconnection requirements and can be used in wide ranges of distributed generation application such as Photovoltaic, Wind, Fuel Cell, Bio Mass and Combined Heat and Power.

TEDOM **Třebíč, Czech Republic**

"TEDOM has been using ComAp mains decoupling relays for over 10 years – installing over 1500 units during this time on both new projects and upgrading older installations. MainsPro was first used immediately after the product release as a replacement for the NPU protection unit that we used before. Typical uses for MainsPro include switchboards of cogeneration units and gen-sets operating in parallel with the public distribution network. MainsPro accurately measures and evaluates the essential mains parameters, and provides reliable mains-decoupling protection. It also brings added benefits including excellent usability, possibility of mechanical sealing, a wider range of features and the ability to switch two-set settings via an external contact"



Petr Sedlák
Electrical Department
Manager
www.tedom.eu



Modern communications made simple. ComAp's powerful AirGate technology is provided in a range of our controllers and makes remote internet connection to the ComAp controller easy. Just register the AirGate enabled controller on our website and from then on let ComAp's unique system locate and maintain contact with the controller, no need to worry about VPN's, Static IP addresses or corporate firewalls, simple! "AirGate – Simply connected."



The WebSupervisor system allows equipment fitted with various types ComAp units to be monitored via the internet from a remote PC or other web enabled device such as smart-phone, iphone, webbook, etc. The advanced web-based system tackles many of the problems associated with monitoring the status of a large number of assets in the field, by centralising the data onto a secure central server which can then be accessed by the client locally. The operator simply browses to the WebSupervisor webpage and enters their username and password. Once authorised it is then possible to view the remote assets registered to that account.



ComAp

ComAp is a dynamic international company with a solid reputation for delivering innovative solutions to our customers and the power generation market. By working closely with our customers and providing state-of-the-art quality products, ComAp has built a name as a dependable supplier delivering quality, reliability, localised service and good value.

www.comap.cz



Customer satisfaction is our mission. We continuously develop the best people to succeed in our mission.

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“At Energocentrum Plus, we specialise in software development (RcWare) used for the operation of energy systems, particularly across the Czech Republic. Our work brings us into contact with ComAp products and we co-operate regularly on many applications. On each occasion we value their technical expertise and willingness to work quickly and efficiently to help make each project a success.”

Martin Chlupáč
Project Manager
www.energocentrum.cz