

Inside Phocos

Newsletter - March 2011

Welcome to the Phocos e-mail newsletter. Here you will find the latest technical and application insights and up-to-date information on Phocos and our innovative portfolio of charge controllers and power management solutions.

Products

CX48 Charge Controller

Meet the intelligent charge controllers of the CX series and the new member of this series, the Phocos CX48

Phocos has further developed the popular CX charge controller series. In addition to the CX10, CX20 and CX40, which all work in the 12 and 24 V range, now you can also buy the new CX48 working in the higher 48 V operation class. This new charge controller can be programmed to work in the 24 V range as well.

The CX Series offers outstanding features for its class: Along with a PWM charge controller with integrated



Phocos CX48 Charge Controller

temperature compensation, the CX controller comes equipped with a wide range of control, programming and protection functions. The battery charge status is continuously displayed via a circular bar graph, showing the input and output current indication of

the battery as well as the load status (e.g. overloading, load short circuiting). The deep discharge protection mode has 5 settings: two fixed voltages, two charging states or adaptive (for battery protection). An audible alarm and a programmable nightlight function are standard to all CX controllers.

This wide range of control, programming and protection functions will give you more convenience and reliability for your solar-powered applications. Of course, the Phocos CX48 is compatible with all other members of the CX family and the popular CXCOM software (also see below).

Software CXCOM

Gives you insight into your complete off-grid system: The Phocos CXCOM Software



Introduction to the software CXCOM

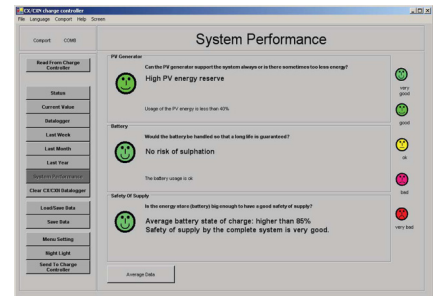
Well designed devices require corresponding software to achieve optimum results in a wide range of scenarios. This is why the Phocos engineers have designed the Phocos CXCOM software to enable maximum flexibility and optimum yield of the individual system components in applications equipped with Phocos CX-series charge controllers.

This professional and user friendly software supports selection of an individual CX charge controller and enables an insight into the complete off-grid application: Acquired status data such as battery state of charge, battery voltage, low voltage disconnects, average battery states, nominal current, ampere hours to the loads and solar module, and many more. CXCOM contains a data logging function, which can save data for a whole year. It keeps track of the system in minutest details. The simple symbols help recognize the system output quickly: The software also delivers useful system information about the previous night period; it recognizes deep

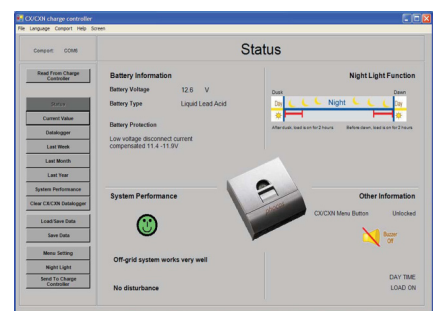
discharge and excess energy build up which can be used for other beneficial applications. Performance data of the different components can be displayed, as well as a complete system evaluation.

This is a substantial support to installers or trained end users, to recognize and learn more about how the individual components perform, where the bottlenecks are, what has to be changed in order to improve the yield of the system, and other.

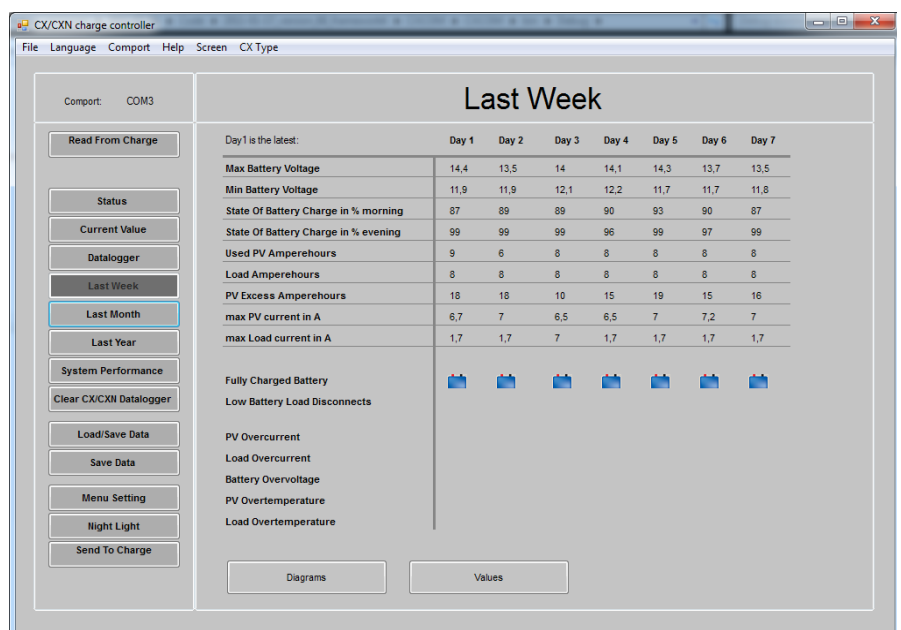
Please, note: the CXCOM software is particularly indicated for convenient remote monitoring; it enables comfortable and fast configuration, control and surveillance even from the most remote locations. The CXCOM helps improve system reliability, optimum power output and reduced system and maintenance costs.



CXCOM displays system performance in a quick and easy way



It gives an overview of the actual system status



The CXCOM keeps track of the system in minutest details

CX40 series used in a school in São Paulo

Application: Phocos CX40 series used in a school in São Paulo, Brazil

Located in a shanty town in São Paulo, Brazil, the Casa do Zezinho is an NGO which has been active for 16 years in the education of children in one of the poorest areas of São Paulo City. The school also runs dedicated educational and environmental protection programs for the entire community. The donation of a solar system was an excellent addition to their initiatives: beside the contribution to a more sustainable world, it ensures a reliable power supply for their IT infrastructure, which was not possible with local grid power.

The system is also used as back-up system for the complete power needs during the frequent power outages. To achieve optimum yield from the solar modules installed on the roof and to ensure a reliable power supply, the system integrator uses Phocos CX40 charge controllers. These intelligent charge controllers offer PWM regulation with integrated temperature compensation and feature intelligent display, programming and safety functions, e.g. deep discharge protection.



The system integrator uses CX40 charge controller for reliable power supply for a school's IT infrastructure and for its back-up system

Acoustic warnings and nightlight functions can be programmed by the user. Thanks to the PV off-grid system, the school can now offer IT training, increasing the future prospects of the children dramatically. The PV system also functions as a back-up system to guarantee reliable power availability in case of the many grid failures in the area. As a consequence, the school has become an important meeting point for the young population of the area:

In the evenings, people come to the school for reading; studying and learning as there is always light available at night.

The school will also use energy-saving Phocos DC compact fluorescent lamps as back-up lights, which feature high illumination efficiency, a large number of switching cycles and over temperature protection.

Events

WFES 2011 in Abu Dhabi



Phocos, with its off-grid expertise, offers efficient and reliable system solutions. For developing and emerging countries the power supply is a strong contribution to creating a better future for individual people as well as for their communities. This is the reason why this technology is being used in more and more applications and in more and more geographical areas.

This was also demonstrated at the World Future Energy Summit, January 17 to 20 in Abu Dhabi, UAE. Here Phocos participated for the second time within the German Pavilion with a presentation of Phocos products and solutions for solar powered off-grid applications. Since its inception in 2008, the World Future Energy Summit "WFES" has become the main international exhibition for renewable energies and environmental industries in the MENA region. In 2011 WFES uniquely brought together over 26,000 attendees from 129 countries including world leaders, international policy makers, industry leaders, investors, experts, academia, intellectuals and journalists to find practical and sustainable solutions for today's energy security and climate

change challenges. We cordially thank to all visitors of the Phocos booth in the German pavilion.

At WFES Phocos registered a strong interest for solar street light systems, one of Phocos core technologies:

The fully encapsulated **Phocos CIS charge controller** with IP68 type protection presented at WFES has been specifically designed to ensure reliable battery charge control for PV systems exposed to extreme weather and environmental conditions and to prevent damage to the electronics due to corrosion. It is the world's only charge controller with an integrated dimming function, enabling increased functional reliability and economical energy consumption.



Phocos CIS Charge Controller - fits everywhere

With its wide temperature range from - 40 °C to + 60 °C, it meets the requirements of the street lights, which are exposed to harsh, wet weather conditions and extreme temperatures. The

automatic day/night recognition and flexible consumer load timer functions that can be programmed to adapt to different daylight scenarios, as well as variable dimming functions in order to save power, contribute to making CIS the perfect charge controller for street light projects. The industrial-grade charge controller is also suitable for all commercial PV applications and offers 4-stage PWM charging combined with a low-voltage disconnect, and a multi-LED system status display.

Phocos' new multifunctional **Pico Lamp** also attracted major interest at the fair. This innovative energy saving high power LED lamp with built in battery is a multifunctional mobile or stationary lighting device specially designed to meet the needs of rural households and outdoor enthusiasts. It features three light levels (55 h at 20 lumens, 16.5 h at 50 lumens, and 5.5 h at 120 lumens) and has an integrated charge controller that will accept direct charging from a PV solar module, a car cigarette lighter adapter or an AC adapter. An USB port serves as a charging station for electrical devices (e.g. mobile phones, MP3 players, etc.). Thanks to its robust housing (IP65) it is protected against dust, splash water and harsh environmental weather conditions.

Did you know? Phocos named “German World Market Leader”

For its successful portfolio of innovative charge control products and solutions Phocos has received the “World Market Leader Award 2011”. This has earned the company a place among Germany’s 750 world market leaders in the well-known “Lexikon der deutschen Weltmarktführer” (Encyclopaedia of German World Market Leaders).

To be selected for this prestigious list Phocos has met the typical success criteria of most world market leading companies: show presence on the market very early on, keep the course of activities, offer customization, and always focus on the clients and adapt to technical progress.

By honouring these criteria, Phocos carries German product excellence into the world with its successful series of solar-powered charge controllers and components for autonomous power supply and its proven energy-saving appliances.

Disclaimer

Phocos AG
Magirus-Deutz-Str. 12
89077 Ulm, Germany
Phone +49 731 9380688-0
Fax +49 731 9380688-50
www.phocos.com
info@phocos.com



Award Ceremony at Schwaebisch Hall, Germany: Phocos CEO Alexander Macketanz (middle) receives the Phocos World Market Leader Award from strategy expert Prof. Dr. Bernd Venohr (left) and Dr. Florian Langenscheidt, editors of the “German World Market Leader Encyclopaedia” (right).

Board of Management: Alexander Macketanz
Chairman of the Board: Prof. Dr. Walter Commerell

Company Registration: AG Ulm, HRB 4231
VAT-ID-No.: DE213453724
WEEE-Reg.-No. DE 11775838

For more information please contact us at: info@phocos.com