

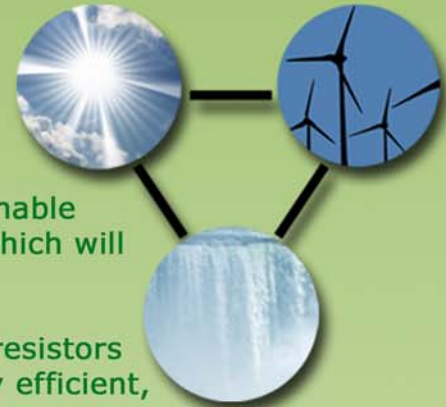
THE GREEN ISSUE

At Ohmite, we take our responsibilities very seriously and it is our policy to invest in those products which we know our customers will need in order to make full use of the many types of 'green' and renewable energies available to us.

We have already introduced several new products designed to enable engineers to specify components from a trusted manufacturer which will satisfy their energy saving requirements.

This publication features those new products and other Ohmite resistors which are in use as part of the worldwide effort to create energy efficient, energy saving and energy creative products.

As our plans are ongoing, Ohmite will continue to produce other products which you may also find of interest. In order to receive this information, please register with us at www.ohmite.com/greenissues. Prepare for the future with Ohmite.



Addressing the needs of sustainable and re-usable power development, Ohmite has extended the power range and resistance range of their heatsinkable thick film resistors. Not only have they added the new 2000w TA2K0 power resistor family to address these needs, Ohmite have also released and made standard the 0.25, 0.33, and 0.50 ohm versions of their TAP600 and TAP800 products at 10% tolerance.

With applications in the manufacturer of fuel cells and the inverters (DC to AC) and charge controllers used in photovoltaic and wind power systems., Ohmite have increased the power rating of their components to meet the demands of products which are scaled up above 10Kv and up to 100Kv.

Following increased demand from battery manufacturers, and companies involved in the development of green power solutions Ohmite have responded by developing their SH shunt resistor.

The first in a new series, the SH offers a range of capability from 100-300 amps in a sturdy metal-clad housing. Standard part numbers (5) all offer 0.50% tolerance and convenient 400mm long insulated wire sense leads for convenient and accurate current monitoring. The manganin plate housed inside the SH forms the resistive element.

For safety, the SH Series is supplied in a metal clad housing, making it more suitable for end-product use. The SH is ideally suited for use in renewable energy applications such as battery banks, wind turbines and solar panels.



MACROCHIP MADE FOR METERING

Selected for its precision in an all important surface mount package, Ohmite's Macrochip MC103 high voltage SMD resistors are being used by a major manufacturer of energy metering systems.

The meter can measure flicker, harmonics, voltage deviations, inter-harmonics, mains signalling and other power quality indices, in accordance with internationally recognized standards such as EN50160, IEEE 868 and IEEE 519-1992. It can also be re-programmed as these standards evolve. It can capture all voltage and current channels at 256 samples per cycle and detect and record transients as short as 65µs at 60Hz. Revenue certified parameters include hundreds of ANSI compliant measurements and all standard demand calculation methods, comprehensive time-of-use metering, instrument transformer correction and transformer/line loss compensation values.

MACROCHIP



METALOHM HELPS CUT POLLUTION IN SAN PEDRO BAY

Balqon is a small, publicly traded (BLQN) company based in LA. They have developed a series of heavy duty electric trucks using Ohmite's Metalohm resistors which are now being used to haul cargo in and around the Port of Los Angeles. The trucks have a range when fully loaded of 40-60 miles depending on model. It takes 3.5 hours to recharge them. On a kilowatt hour of energy this electric truck costs roughly 20 cents a mile to operate. On a per-mile cost-basis, a common diesel truck could cost anywhere from four to nine times as much, depending on fluctuating fuel costs and actual duty-cycle activity (100% duty cycle equals zero percent

truck idling). On an annual basis, more than two million truck drayage trips take place between the Port of Los Angeles terminals and rail and warehouse facilities within five to ten miles of San Pedro Bay. An overall calculation of net emissions reductions still needs to be performed to take into account the emissions created in the generation of electric power used to charge the truck's emissions generated by the existing fleet of drayage trucks that serve the San Pedro Bay ports, Port of Los Angeles staff estimated the average pollution discharge generated by the estimated 1.2 million truck trips that occurred in 2006 between the ports and a local near-dock railyard (the Intermodal Container Transfer Facility or ICTF). If those 1.2 million truck trips were To be made with zero emission electric trucks, an estimated 35,605.6 tons of tailpipe emissions would be eliminated, including: 21.8 tons per year of diesel particulate matter (PM), 427.7 tons per year of localized NOx (NOx) emissions, 168.5 tons per year of carbon monoxide (CO), and 34,987.6 tons per year of carbon dioxide (CO2).

METALOHM





GW SERIES

WIND TURBINES NEED GW RESISTORS

With an epicenter in the city of Tianjin, the Chinese have moved past Denmark, Germany, Spain and the USA as the number one producer of wind turbines and one manufacturer has already placed a large order for our GW Series resistors. With the demand for electricity in China increasing at 15% annually, the demand for expanding the available power requires China to add nearly nine times as much capacity as the US in the coming decade. Much of the power generation will come from new equipment and facilities and China anticipates its use of renewable energy sources to grow from 4% currently to 8% by 2020. Meantime, major European companies have moved quickly to establish turbine manufacturing capabilities in China and to transfer technologies to speed development. Global politics and macroeconomics aside, it is our job to have the right resistors for any customer in the world seeking solutions. In this case, numerous screw-terminal capacitors are employed in the pitch control systems for these massive windmills. Each capacitor requires a bleeder resistor which is easy to install, reliable, price competitive, and most of all, available.

Domestic energy management systems which are needed by homes and businesses to manage their energy consumption carefully, use power in off-peak hours, lowering the heat or air conditioning in unoccupied spaces, measuring and recording energy consumption, and communicating the results which are all aspects of the revolution taking place in the power grid. Anything connected to the power grid is subject to unpredictable line surges and dropouts. For that reason we have seen increasing demand for all of our surge-rated resistors from axial lead wirewounds, like the 30 Series, to the SMD version of the same product (RH3R0DB), to ceramic composition and TFS Series. Ohmite offers a wide range of surge capable resistors in wirewound, film, and composition constructions to support this growing market.

GREEN SHOOTS - Battery powered and hybrid vehicles are another growth area for Ohmite. A company based in the Midwest is using our A Series ceramic composition resistors for their latest project to develop the next generation of battery technology. Now in production, the company estimates that it will create 1400 new jobs in the clean energy industry and will have the capacity to make battery packs for around 600,000 hybrid electric vehicles annually.



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SOAKING UP THE SUN

This Ohmite customer is a leader in solar microinverter systems with solutions that improve the performance, intelligence, reliability and safety of solar systems. Their microinverter system integrates state-of-the-art solar microinverters with advanced communications technology and web-based monitoring and analytics. It also provides a platform to connect solar generation with energy management technology, offering a simple and compelling solution to complex energy problems. The microinverter, which houses an Ohmite 225W power resistor, attaches to the racking beneath each solar module and converts DC power to grid-compliant AC power.

PV INVERTER COMES WITH A 10-YEAR GUARANTEE

An innovation leader for grid-tied photovoltaic (PV) inverters in the residential, commercial and utility markets, this company has pioneered the use of advanced reliability engineering to design inverters with a 20+ year operating life.

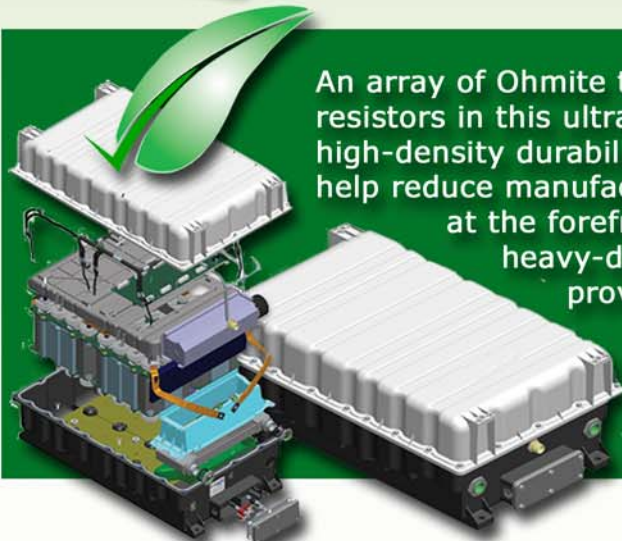
Bringing together one of the most experienced design teams in solar power electronics, they have tackled three significant issues affecting the growth of solar power usage worldwide, namely (1) dramatically improving the reliability of inverters, (2) decreasing the levelized cost of energy (LCOE) and (3) making distributed PV a scalable and controllable resource on the utility grid. Using Ohmite's TAP600 resistors, the company is so confident of their product that they offer the industry's first standard 10-year nationwide warranty.



TAP600



An array of Ohmite thick film power resistors are used as bleeder and control resistors in this ultracapacitor-based energy storage module. Offering high-density durability and reliability, it is lightweight and scalable, and can help reduce manufacturing and maintenance costs. The manufacturer has been at the forefront of developing hybrid-electric drive systems for heavy-duty commercial vehicles. Across the world today, their proven track record includes more than 300 hybrid systems and over 13 million miles of fleet operation. Their systems are built to optimize energy storage cycle life, performance, stability, and reliability all within a modular, scalable design.



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