

Powersmiths Contributions Towards
CHPS Criteria

P O W E R F O R T H E F U T U R E





Transformers as a Source of Energy Savings

E-Saver-C3™ and T1000-C3™



There are many steps that schools can take to increase energy efficiency, but few if any are as easy to implement and have as short a payback as increasing transformer efficiency. Once installed, your school's transformers will stay in operation for decades, often as long as the school itself. Getting your decision right can save your school millions of kWhs and hundreds of thousands of dollars over the life of school building.

Legislated efficiency standards for transformers like NEMA TP1, EPACT 2005 and C802.2 represent the least efficient performing transformers that can be legally installed.

Powersmiths E-Saver-C3™ and T1000-C3™ transformers exceed these standards to reduce transformer electricity waste by 60% or more. Installing Powersmiths C3 transformers can cut your schools electricity consumption by one and a half to two percent. And for schools, a one and a half to two percent reduction in electricity consumption means thousands of dollars annually and substantial reductions in polluting emissions from the local utility.

CHPS Category: Energy Efficiency
Goal – Superior Energy Performance

- Exceeds mandated efficiency standards to reduce electricity waste by 30% or more
- Calculating savings is made easy with the use of Powersmiths free Energy Saving and Payback Calculator

Easy Skid™



Powersmiths designed Easy Skid™ to conserve wood, facilitate shipping and simplify the installation of electrical transformers. Manufactured with FSC wood to conserve forests.

CHPS Category: Materials
Goal – Divert Waste from Landfill Sites

- Supports waste reduction – Packaging uses 70% less wood and biodegradable shrink wrap

SMART™ Integrated Meter Option



Fundamental building commissioning and on-going efficiency verification is recognized in CHPS as a means to achieve energy efficiency. But accessing consumption and efficiency data from transformer can be difficult, risky and time consuming. Powersmiths has solved the safety and accuracy problems associated with acquiring energy measurements, by integrating SMART meters into Powersmiths transformers. SMART provides effective sub-metering of your transformers, while eliminating the safety and disruption risks inherent in opening transformer enclosures.

CHPS Category: Energy Efficiency
Goal – Fundamental Building Commissioning

- Validates transformer performance to ensure it meets specifications

CHPS Category: Energy Efficiency
Goal – Enhanced Commissioning and Sub-metering

Measurement and Validation

- Tracks process load and plug load vs. benchmark model
- Provides accountability of on-going energy consumption over time, tracking actual usage vs. benchmark model



Metering & Sub-Metering for Energy Management

Cyberhawk™ Metering Family



Cyberhawk energy meters monitor and record electricity consumption and power quality, in addition to measuring and recording data from pulse measured systems such as gas and water meters.

The Cyberhawk family comprises meters for the building entrance that not only measure total power input and quality but

protect the building from power quality events including severe lightning strikes. Additional Cyberhawk meters supply the sub-metering recommended in CHPS as a means of tracking and comparing consumption and identifying problems and opportunities to conserve. Cyberhawk meters provide a comprehensive data set for the school's environmental

curriculum and Energy Management System (EMS). All metered data is Web accessible for anytime anywhere energy management.

CHPS Category: Energy Efficiency Goal – Fundamental Building Commissioning

- Validates energy system operation
- Measures performance to ensure specifications are met

CHPS Category: Energy Efficiency Goal – Enhanced Commissioning and Sub-metering

- Can sub-meter all energy consuming systems in support of effective energy management
- Records temperature sensors and pulse inputs from water and gas meters
- Provides accountability of on-going energy consumption over time, tracking actual usage vs. benchmark model

School as a Teaching Tool

Powersmiths WOW



WOW accesses resource consumption data from a building's metered systems and consolidates it onto one platform, where it can be used for energy management and sustainability education. Decision support tools in WOW facilitate on-going accountability of installed systems, by enabling users to track the performance of multiple building systems against user defined benchmarks, all from one convenient platform.

WOW delivers sustainability education through colorful intuitive Web pages that showcase and explain a building's high performance features. Displayed on a touchscreen kiosk and over the Web, WOW invites building occupants and visitors to learn how a building achieved CHPS certification and view the building's actual resource savings. WOW's interactive graphs and gauges translate energy savings into tangible environmental benefits allowing the building to become a teaching tool for sustainability.

The School as a Learning Tool Goal – Build Environmental Awareness

- Provides a permanent educational display
- Explains how the school's environmental features work
- Incorporates live data to describe and demonstrate high performance features
- Shows real-time and historical resource use
- Translates energy savings into tangible environmental benefits

CHPS Category: Energy Efficiency Goal – Implement an Energy Management System

- Consolidates data to support validation of all energy systems
- Provides oversight of energy, water and other resource consumption on an on-going basis helping to ensure that systems continue to function as intended
- Compares actual performance against benchmarks
- Provides one convenient portal for insight and management



CONTRIBUTIONS BY CHPS CREDIT/PREREQUISITE

Fundamental Building Commissioning

SMART Integrated Meter

- Provides a continuous log of transformer's load profile
- Available with quick connects to Cyberhawk Portable Meter

Cyberhawk Portable Meter

- Captures energy, efficiency and power quality data to verify systems and individual equipment meet performance specifications

Cyberhawk 100/100M

- Provides cost-effective sub-metering of up to six independent single or 3-phase locations
- Captures energy, efficiency and power quality data to verify systems and individual equipment meet performance specifications
- Continuously records analog information like temperature sensors and pulse inputs from water and gas meters
- Supports performance validation of building systems and electrical devices
- Offers built in support for sustainability management and education software such as Powersmiths WOW
- Accessible via web-browser over Ethernet

Cyberhawk 300

- Measures up to three 3-phase points in a single meter
- Captures energy, efficiency and power quality data to verify systems and individual equipment meet performance specifications
- Continuously records analog information like temperature sensors, and pulse input from water and gas meters

Enhanced Commissioning and Sub-Metering

SMART Integrated Meter

Cyberhawk Portable Meter

Cyberhawk 100/100M

Cyberhawk 300

Powersmiths WOW

- Consolidates data from all Web-accessible meters to provide comprehensive insight into the performance of all resource input systems
- Validates operation of all energy systems
- Measures actual performance against established performance benchmarks
- Alerts managers to performance problems

Superior Energy Performance

E-Saver C3 & T1000 C3 High Efficiency Transformers

- Exceed legislated efficiency standards to deliver measurable energy savings
- Energy savings can reduce building's total electricity use by 1.5 - 2%
- Savings can be easily documented using Powersmiths Energy Savings and Payback Calculator™

The School as a Learning Tool

Powersmiths WOW

- Demonstrates how your building achieved CHPS certification
- Allows the building to be used as a learning tool
- Describes high performance features using live data
- Supports curriculum studies
- Correlates building features to CHPS checklist and tracks actual performance against benchmarks
- Educates building occupants and visitors on sustainability
- Helps foster a culture of conservation

Construction Waste Diversion

Easy Skid

- Powersmiths ships transformers on Easy Skid which uses 70% wood than standard shipping pallets.
- Biodegradable shrink wrap and FSC wood are used

To find out more about how Powersmiths products and services can help you meet your CHPS certification goals, contact us at: info@powersmiths.com or 1-800-747-9627



POWERSMITHS INTERNATIONAL CORP. 10 Devon Road, Brampton, Ontario L6T 5B5 Canada

Phone: (905) 791-1493 Toll-free: (800) 747-9627 Fax: (905) 791-8870

www.powersmiths.com

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