

From: Lobo, Deborah

Sent: 12/10/2014 9:26:55 PM

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CC:

Subject: U.S. TRADEMARK APPLICATION NO. 79124238 - VULCANIC - 06286-T0001A - Request for Reconsideration Denied - Return to TTAB - Message 1 of 7

Attachment Information:

Count: 22

Files: ChromoloxJunctionBox.jpg, ChromoloxRemoteControl.jpg, ChromoloxThermostat.jpg, EmersonElecVoltageRegulator.jpg, EmersonEnergyMeter.jpg, EmersonRemoteControl.jpg, EmersonThermostats.jpg, emersonUsageMonitors.jpg, JohnsonControlsElecBatteries.jpg, JOhnsOnControlsElecBatteries2.jpg, JohnsonControlsEnergyPerfMonitor.jpg, JohnsonControlsThermostats.jpg, robertshawResistors.jpg, RobertshawTempProbe.jpg, RobertShawTempRegulator.jpg, robertShawThermostats.jpg, TEmpcoJunctionboxes.jpg, TempcoLimiterRegulator.jpg, TempcoLimiterRegulator2.jpg, TempcoLimiterRegulator3.jpg, TempcoLlmiterregulator4.jpg, 79124238.doc

**UNITED STATES PATENT AND TRADEMARK OFFICE (USPTO)
OFFICE ACTION (OFFICIAL LETTER) ABOUT APPLICANT'S TRADEMARK APPLICATION**

U.S. APPLICATION SERIAL NO. 79124238 MARK: VULCANIC	
CORRESPONDENT ADDRESS: ANDY I COREA ST ONGE STEWARD JOHNSTON & REENS LLC 986 BEDFORD STREET STAMFORD, CT 06905-5619	GENERAL TRADEMARK INFORMATION: http://www.uspto.gov/trademarks/index.jsp VIEW YOUR APPLICATION FILE
APPLICANT: VULCANIC	
CORRESPONDENT'S REFERENCE/DOCKET NO: 06286-T0001A CORRESPONDENT E-MAIL ADDRESS: tm-pto@ssjr.com	

**REQUEST FOR RECONSIDERATION ACCEPTED IN PART AND
DENIED IN PART**

ISSUE/MAILING DATE: 12/10/2014

INTERNATIONAL REGISTRATION NO. 1066675

The trademark examining attorney has carefully reviewed applicant's request for reconsideration filed on November 8, 2014. Applicant's proposed changes to the identification of goods for Classes 9 and 11 are accepted. The request is denied as to the Section 2(d) refusal for the reasons stated below. See 37 C.F.R. §2.64(b); TMEP §§715.03(a)(2)(B), (a)(2)(E), 715.04(a). The requirement(s) and/or refusal(s) made final in the Office action dated October 18, 2013 are maintained and continue to be final. See TMEP §§715.03(a)(2)(B), (a)(2)(E), 715.04(a).

The refusal under Section 2(d) refusal as to Classes 9 and 11 is maintained because applicant's mark VULCANIC (& DESIGN) is confusingly similar to the registered marks VULCAN CAL-STAT (US Reg. No. 1281328) and VULCAN (US Reg. No. 1609678). Specifically, the dominant element of applicant's mark, i.e., the literal term VULCANIC is confusingly similar to the term VULCAN in the '678 registration and the dominant term VULCAN in the '328 registration.

In addition, as previously noted goods similar to those of the applicant and registrant often originate from a common source or are sold in the same. The attachments from the following third-party websites are further evidence that applicant's Class 9 and 11 goods are related to the registrant's goods.

<http://www.johnsoncontrols.com/> (Class 9: thermostats; electric batteries; energy performance monitor) (Class 11: HVAC parts; diffusers; refrigerating machines and installations; heat exchangers; climate control/ventilation control systems)

<http://www.tempco.com/> (Class 9: thermostats; power limiter/regulator; junction boxes; temperature indicator) (Class 11: enclosed heaters; finned tubular heaters; heating elements; heating tape; infrared heaters)

<http://www.emersonclimate.com/> (Class 9: thermostats; electric voltage regulator; power usage monitor; energy meters) (Class 11: HVAC unit and parts; drying apparatus for refrigeration; humidifiers)

<http://www.robertshaw.com/> (Class 9: thermostats; resistors; temperature regulators; temperature probe)

<http://www.chromalox.com/> (Class 9: thermostat; junction box; remote control) (Class 11: air diffuser; finned tube; steam generating installation; infrared heating; heating element cartridges)

<http://www.grainger.com/> (Class 11: air diffusers; finned tube; ventilation hoods; ACs; immersion heaters)

<http://tekmarcontrols.com/> (Class 9: thermostat; boiler controls)

<http://www.westinghouse.com/> (Class 9 & 11: thermostats; air conditioners; heating and cooling installations)

<http://www.lennox.com/> (Class 9 & 11: thermostats; air conditioners; air conditioning apparatus & installations)

<http://www.catadyne.com/> (Class 9 & 11: thermostats; industrial heating and cooling installations)

<http://www.trane.com/> (Class 9 & 11: thermostats; heating and cooling installations)

Moreover, different goods in the electrical, electronic, and/or electromechanical fields have been found to be related where the evidence shows that the goods would be marketed through the same channels of trade and/or sold to the same classes of purchasers. *See, e.g., Alliance Mfg. Co. v. ABH Diversified Prods., Inc.*, 226 USPQ 348 (TTAB 1985) (finding cycling-type furnace controllers and various home products, including garage door openers and remote controls for operating lights and appliances, to be related, where both parties' goods were electrically powered/electronically operated, had similar energy conserving characteristics, and were sold for residential use); *In re Globe-Union Inc.*, 189 USPQ 158, 159 (TTAB 1975) (finding resistor-capacitor components and ceramic condensers to be related, where such goods "would be sold in the same trade channels to the same classes of purchasers such as original equipment manufacture[r]s for incorporation in the same piece of electronic equipment or apparatus"); *In re Dynaco, Inc.*, 189 USPQ 104, 105 (TTAB 1975) (finding two-channel stereophonic amplifiers, loudspeakers, and non-electronic devices for connecting amplifiers and speakers, on the one hand, and switching transistors, on the other, to be related because the goods would be "invariably sold to the same class of purchasers in such circumstances and conditions that if persons were to encounter them under the same or similar marks, they might well be induced to believe that they originate from a common source"); *Nat'l Steel Constr. Co. v. Matsushita Elec. Indus. Co.*, 158 USPQ 464 (TTAB 1968) (finding electric washing machines and electric water heaters to be related, where such goods were sold through the same channels of trade to the same class of purchaser, where the purchase of one of the party's goods could lead to the purchase of the other party's goods, and where the evidence of record indicated that a single manufacturer might produce both electric washing machines and electric water

heaters); *see also Ultra Elec., Inc. v. Workman Elec. Prods., Inc.*, 192 USPQ 497 (TTAB 1976); *In re Int'l Components Corp.*, 191 USPQ 653 (TTAB 1976).

In the present case, applicant's request has not resolved all the outstanding issue(s), nor does it raise a new issue or provide any new or compelling evidence with regard to the outstanding issue(s) in the final Office action. In addition, applicant's analysis and arguments are not persuasive nor do they shed new light on the issues. Accordingly, the request is denied.

The filing of a request for reconsideration does not extend the time for filing a proper response to a final Office action or an appeal with the Trademark Trial and Appeal Board (Board), which runs from the date the final Office action was issued/mailed. *See* 37 C.F.R. §2.64(b); TMEP §715.03, (a)(2)(B), (a)(2)(E), (c).

If time remains in the six-month response period to the final Office action, applicant has the remainder of the response period to comply with and/or overcome any outstanding final requirement(s) and/or refusal(s) and/or to file an appeal with the Board. TMEP §715.03(a)(2)(B), (c). However, if applicant has already filed a timely notice of appeal with the Board, the Board will be notified to resume the appeal. *See* TMEP §715.04(a).

/deborah e. lobo/

Trademark Examining Attorney

Law Office 109

Email: deborah.lobos@uspto.gov

Phone: 571-272-3263

Home > [Product Catalog](#) > [Heat Trace](#) > [Heat Trace Controls, Panels, Accessories](#) > [DL EL Series Cable Accessories](#) > **PJB**

PJB
Rain Tight
Junction Box
for use with
SSK



[Zoom](#)

- Use With: SRL, SRM/E, CWM, SRF
- Third-party certifications: UL Listed, CSA, FM

Description

Polycarbonate watertight enclosure for use with SSK

Resources

- [DL Accessories Catalog Page](#)
- [Heat Trace Design Guide](#)
- [PJB Junction Box Installation Manual](#)
- [Heat Trace Specification Data Sheet](#)
- [EL Product Data Sheet](#)

Spec Your Model

Parameters

[RESET FORM](#)

Select a Part:

Part #	Description	
393676	PJB Rain Tight Junction Box	Buy

1 Matching Items

Can't find the DL EL Series Cable Accessorie you're looking for? [Request a Quote](#)

Shopping Cart

[Go to Cart](#)

- [Contact An Engineer](#)
- [Chromalox Tools](#)
- [Technical Literature](#)

http://www.chromalox.com/productcatalog/Heat+Trace/Heat+Trace+Controls+Panel+s++Accessories/DL+EL+Series+Cable+Accessories/PJB/model-details.aspx?m=4966

Home > [Product Catalog](#) > [Heat Tracing Products](#) > [Commercial Cables and Controls](#) > [Heating Cable - Snow Melting Controls](#) > [RCU-3](#)

RCU-3 Remote Control Unit

- Remote System Status Indication
- Convenient Manual Control for Melting Problem Areas
- Low Cost
- Simple Installation



[Zoom](#)

Resources

- > [RCU-3 Catalog Page](#)
- > [Heat Trace Design Guide](#)
- > [Heat Trace Overview](#)

To Order:

[Request a Quote](#)

Standard models are assembled to order. See catalog page PDF in Resources section above for available configurations. Custom designs are available to your industrial heat application. For more information, please contact your local Chromalox representative by clicking "Request a Quote" or calling 800-443-2640.

Shopping Cart

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- [Contact An Engineer](#)
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<http://www.chromalox.com/productcatalog/Heat+Tracing+Products/Commercial+Cables+and+Controls/Heating+Cable+-+Snow+Melting+Controls/RCU-3/model-details.aspx?m=4605>

Thermostats



Overview

A variety of simple mechanical thermostats are available for applications such as comfort heating control, outdoor freeze protection, heat trace cable, and corrosive or hazardous environments.

Technical Resources

- > [Controller Overview](#)
- > [Controller Selection Guide](#)

Find Your Model

Parameters:

[RESET FORM](#)

Select a Model to Spec:

Model	Description
30000	Surface Mount Temperature Controller
CH	Infinite Control Mechanism
EPETD-8D	Explosion Proof Room Thermostat
UCB	Percentage Timing

Roll over results for more details

13 Matching Items

Shopping Cart

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- [Contact An Engineer](#)
- [Chromalox Tools](#)
- [Technical Literature](#)

http://www.chromalox.com/productcatalog/Component+Technologies/Electromechanical+Controls+and+Thermostats/Thermostats/product-details.aspx?p=327

Can't find the Thermostat you're looking for? [Request a Quote](#)



Before installing the *XV300K* regulator read the manual and follow the all instructions carefully.

In compliance with European regulations and the EMC rules and regulations we repeat that the *XV300K* regulator is designed to be installed inside a machine or a standard electrical cabinet and is therefore considered a component. The installer must guarantee that the machine conforms to such regulations. The manufacturer reserves the right to make technical modifications in order to improve the quality and features of their products at any time.

1 PRELIMINARY CHECK – GUARANTEE – RECYCLING

Before installing the *XV300K* regulator check to make sure it has not been damaged during transport and that it corresponds to the model which was ordered, verifying that the technical specifications printed on the label correspond to those on the order form (see page coding).

The regulator is guaranteed for up to 12 months on delivery. The guarantee covers production defects which are NOT attributable to goods which have been incorrectly used or tampered with in any way. Any defects due to shipping must be indicated to the shipping company according to the norms of the law. The symbol on the equipment indicates that it should not be considered household refuse and should be transferred to the appropriate point for recycling electrical and electronic equipment.

2 XV300K – SPECIFICATIONS OF USE

The *XV300K* **electronical voltage regulator** is designed to control **fans speed** in systems of refrigeration and heating. It is based on the principle of symmetrical phase partialisation. **It is suitable only for adjustable voltage motors.** *XV300K* functions as a simple 3-phase voltage regulator where the command signal is provided by a remote control (from other devices) or by using a potentiometer.

- CONTROL LINK®
- CONTROL BOARDS
- DISCUS™ WITH CORESENSE™ DIAGNOSTICS
- E2 FACILITY MANAGEMENT SYSTEM
- EC3-X32
- EC3-X33
- ELECTRONIC CONTROL
- EXD-U-00
- HVAC BOARDS
- I PRO DAC
- LEAK DETECTION
- MULTIFLEX I/O
- MULTIFLEX RCBP
- POWER MONITORING
- REFRIGERATION BOARDS
- RMS
- SENSORS & TRANSDUCERS
- Dew Point Sensors
- Indoor Air Quality
- Light Level Sensors
- Power Meter**
- Pressure Transducers
- Refrigerant Transducer
- Relative Humidity Sensors
- Temperature Sensors
- VAV SYSTEM CONTROL
- XEV22 SUPERHEAT CONTROL VALVE DRIVER
- XWEB SUPERVISORY PLATFORM

Power Meter

Emerson's **power and energy meter** offers a comprehensive and versatile energy monitoring solution. Pulse output and a unique phase alarm feature allow this device to suit a wide variety of applications, and compatibility with many types of current transformers allow for easy retrofits and safe electrical practices. Configurations can be performed via keypad and secured from tampering by user-enabled password protection.

Power meter cut sheet
Power meter manual

Current Transformers:

Order Code	Split Core	Order Code	Solid Core
251-1000	5 Amp Split Core, CT, 0.75" opening	251-1020	5 Amp Solid Core, CT, 0.30" opening
251-1001	15 Amp Split Core, CT, 0.75" opening	251-1021	15 Amp Solid Core, CT, 0.50" opening
251-1002	30 Amp Split Core, CT, 0.75" opening	251-1022	30 Amp Solid Core, CT, 0.50" opening
251-1003	50 Amp Split Core, CT, 0.75" opening	251-1023	50 Amp Solid Core, CT, 0.75" opening
251-1004	70 Amp Split Core, CT, 1.25" opening	251-1024	70 Amp Solid Core, CT, 0.75" opening
251-1005	100 Amp Split Core, CT, 1.25" opening	251-1025	50 Amp Solid Core, CT, 1.00" opening
251-1006	150 Amp Split Core, CT, 1.25" opening	251-1026	70 Amp Solid Core, CT, 1.00" opening
251-1007	250 Amp Split Core, CT, 1.25" opening	251-1027	100 Amp Solid Core, CT, 1.00" opening
251-1008	300 Amp Split Core, CT, 1.25" opening	251-1028	150 Amp Solid Core, CT, 1.00" opening
251-1009	400 Amp Split Core, CT, 1.25" opening	251-1029	200 Amp Solid Core, CT, 1.00" opening
		251-1030	70 Amp Solid Core, CT, 1.25" opening
		251-1031	100 Amp Solid Core, CT, 1.25" opening
		251-1032	200 Amp Solid Core, CT, 1.25" opening
		251-1033	250 Amp Solid Core, CT, 1.25" opening
		251-1034	300 Amp Solid Core, CT, 1.25" opening

Rogowski Coils:

Order Code	18" Length	Order Code	24" Length
261-5102	250 Amp, 18" Length	261-5220	2000 Amp, 24" Length
261-5104	400 Amp, 18" Length	261-5230	3000 Amp, 24" Length
261-5105	500 Amp, 18" Length	261-5240	4000 Amp, 24" Length
261-5110	1000 Amp, 18" Length		
261-5120	2000 Amp, 18" Length		
261-5130	3000 Amp, 18" Length		
261-5140	4000 Amp, 18" Length		
261-5150	5000 Amp, 18" Length		

ProAct® Services
Customer Login



http://www.emersonclimate.com/en-US/Products/Electronics_Systems/sensors_and_transducers/Pages/power_meter.aspx

- CONTROL LINK
- E2
- BX (Building Control System)
- CX (Refrigeration / HVAC Control System)**
- RX (Refrigeration Control System)
- E2 Technical Bulletins
- I/PRO HVAC AND LIGHTING CONTROLLER
- MULTIFLEX
- SITE SUPERVISOR
- VAV SYSTEM CONTROL
- XHS0
- XR SERIES
- XJ WIRELESS MODULE
- XM SERIES CASE CONTROL

CX (Refrigeration / HVAC Control System)

Take Back Control - Take Back Your Dollars

The E2 CX Series is a new generation of controllers designed to:

- Be a part of a facility management system that economically operates systems
- Provide detailed power usage information
- Protect food safety
- Keep up excellent indoor air quality
- Seamlessly interface with third-party devices using Echelon, Modbus and BACnet
- Save both energy and maintenance dollars

Easy installation, navigation **and remote control capability**

- Context sensitive help screens and a familiar QWERTY keypad enables anyone to navigate like a pro;
- Manage and program HVAC systems, lighting schedules, and refrigeration systems from either the local display or remote interface;
- Control each HVAC unit based on a specific temperature and sensor reading through communication cable;
- Create zones of variable heating or cooling to meet specific demands and cycle heating and cooling www. to maximize energy savings while maintaining the proper temperature and relative-humidity setpoints.

Enterprise Facility Management

- Lowers energy and maintenance costs;
- Provide easy access to vital enterprise-wide information;
- Trusted by over 5,000 sites, 24/7, to keep facilities running at optimum levels.

Remote Communications

- Accessible on site or through remote-access software from any LAN, WAN or standard modem connection;
- Enables access to full-color animated graphics, color-coded alarm indicators and real-time equipment displays.

Control Link RSC

- Standalone refrigeration controller for reach-in coolers, reach-in freezers, and standalone merchandisers that eliminates old fashioned temperature monitoring;
- May be networked with the E2 CX for remote accessibility and alarm management, which is critical for food safety.

The "Intelligent" Advantage

- Reduces annual maintenance costs by seamlessly interfacing with Emerson Climate Technologies' **Intelligent Store™ architecture**;
- Allows end-users easily adjust set points and view over 100 error codes.

Click link for a **product data sheet on this product**

Click link for the **E2's user manual detailing programming and installation instructions**.

 **ProAct® Services**
Customer Login



http://www.emersonclimate.com/en-US/products/controls/facility_controls/e2/Pages/cx.aspx

- AC DRIVES
- BEARINGS
- BELT DRIVES
- CEILING FANS
- CLIMATE TALK
- COMFORT ENCODED™ SOLUTIONS
- COMPRESSORS
- CONDENSING UNITS
- CONTAINER MONITORING CONTROLS
- ELECTRONICS - COMPRESSORS
- ELECTRONICS - SYSTEMS
- INTELLIGENT STORE™
- MOTORS
- SOFTWARE
- SYSTEM PROTECTORS
- THERMOSTATS**
- BlueSelecto
- EasyReader Thermostats
- Evaporative Cooling Controls
- Humidity Controls
- Sensi Wi-Fi Thermostat
- White-Rodgers™ Line Voltage Thermostats
- White-Rodgers™ Non-Programmable Single Stage Thermostats
- White-Rodgers™ Non-Programmable - Universal Thermostats
- White-Rodgers™ Thermostats Parts and Accessories
- White-Rodgers™ Programmable - Single Stage Thermostats
- White-Rodgers™ Programmable Universal Staging Thermostats
- White-Rodgers Special Purpose Controls
- White-Rodgers™ Temperature Controls
- Thermostat Guards
- White-Rodgers™ Thermostat Remote Sensors
- Dont Know Your Model Number
- VALVES
- BROWSE BY BRAND
- PRODUCTS A-Z

Thermostats

Whether you're in need of a programmable or non-programmable thermostat or a premium touchscreen thermostat, White-Rodgers™ leads the industry in innovative thermostat function and design. White-Rodgers set an industry benchmark when it introduced the Blue touchscreen thermostat. And now, we are pleased to announce the Emerson™ Blue 2" thermostats with 2 square-inch blue displays. From gas valves, ignition controls, transformers and media air cleaners to humidifiers and UV lights, White-Rodgers is a name trusted by contractors for technology-advanced, user friendly products.

To see more information about our thermostats and temperature control products, or to view and download technical information, click one of the product categories below.

Sensi Wi-Fi Thermostat

- [Programmable Single Stage Thermostat](#)
- [Programmable Universal Thermostat](#)
- [Non-Programmable Single Stage Thermostat](#)
- [Non-Programmable Universal Thermostat](#)
- [Thermostat Remote Sensors](#)
- [Thermostat Guards](#)
- [Easy Reader Thermostats](#)
- [BlueSelecto](#)
- [Parts and Accessories](#)
- [Line Voltage Thermostat](#)
- [Temperature Controls](#)
- [Humidity Controls](#)
- [Special Purpose Controls](#)
- [Evaporative Cooling Controls](#)
- [Zigbee Smart Energy](#)
- [Don't Know Your Model Number?](#)

White-Rodgers offers a complete line of Emerson Blue programmable, non-programmable and mechanical thermostats for the above applications. Emerson Blue thermostats are available in four different display sizes: 12" Touchscreen, 6", 4" and 2 square-inch display. You can rest assured that all Emerson Blue Thermostats perform to +/- 1° temperature accuracy - this keeps the homeowner comfortable and optimizes the life and efficiency of the heating and cooling equipment.

Now Available - the Emerson Blue Easy Reader Thermostat

The fastest-growing customer segment in history – Boomers – asked for a thermostat that is easier to read, easier to understand and easier to use. Emerson Blue Easy Reader is the only thermostat with display numbers and letters twice as large as other thermostats, homeowner-friendly language and mode buttons with one-touch functionality for easy operation.

Emerson Blue thermostats are ideal for zoning system control and the new Comfort Alert Copeland Scroll™ compressor protection. When your need is temperature control, look to Emerson Blue.

Product Information

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White-Rodgers Brand Page



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WHERE TO BUY

<http://www.emersonclimate.com/en-us/products/thermostats/Pages/thermostats.aspx>

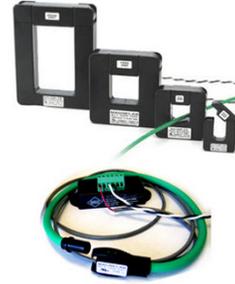
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- CLIMATE TALK
- COMFORT ENCODED™ SOLUTIONS
- COMPRESSORS
- CONDENSING UNITS
- CONTAINER MONITORING
- CONTROLS
- ELECTRONICS - COMPRESSORS
- ELECTRONICS - SYSTEMS
 - Control Link®
 - Control Boards
 - Discus™ with CoreSense™ Diagnostics
 - E2 Facility Management System
 - EC3-X32
 - EC3-X33
 - Electronic Control
 - EXD-U-00
 - HVAC Boards
 - IPro DAC
 - Leak Detection
 - Multiflex I/O
 - Multiflex RCBP
 - Power Monitoring**
 - Refrigeration Boards
 - RMS
 - Sensors & Transducers
 - VAV System Control
 - XEV22 Superheat Control Valve Driver
 - XWeb Supervisory Platform
- INTELLIGENT STORE™
- MOTORS
- SOFTWARE
- SYSTEM PROTECTORS
- THERMOSTATS
- VALVES
- BROWSE BY BRAND
- PRODUCTS A-Z

Power Monitoring

It's well known that you can't manage what you don't measure. That's why Emerson offers retail operators a complete suite of power monitoring components that **enable retailers to monitor power usage at their facilities.** Power monitors and current sensors are available in a wide range of sizes and capabilities, for new and retrofit construction. When integrated with the E2 Facility Management System, these power monitors enable retailers to perform load shedding when power usage is high, reducing or eliminating costly demand charges from utilities. Even more importantly, power monitoring allows retailers to participate in Emerson's **Energy Monitoring and Targeting Reports** service and in the demand response programs offered by many utilities without the addition of any extra control hardware.

Learn about Emerson's **power meter and current transformers.**

Learn more about how Emerson can help you take advantage of utility incentives through our **Demand Response** service.



http://www.emersonclimate.com/en-US/Products/Electronics_Systems/Pages/Power_Monitoring.aspx



- Automotive Interiors >
- Automotive Seats >
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- Hybrid and Electric Batteries >
- Start-Stop Batteries >
- Facilities Management >
- Real Estate Management >
- Workplace Strategy >
- Building Management >
- HVAC Equipment and Controls >
- HVAC Parts >
- HVAC Service >
- Industrial Refrigeration >
- Security & Fire Safety >
- General Information
- Micro Hybrid
- Powersports
- Global Battery Recycling
- Power Solutions Press Kit
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LITHIUM-ION TECHNOLOGY

Battery Applications for Hybrid and Electric Vehicles

Johnson Controls Power Solutions is the world's leading supplier of advanced automotive batteries and energy storage systems.



PRODUCTS & SOLUTIONS

CELLS	MODULES	SYSTEMS
 <p>Learn about our prismatic and cylindrical cell technology more...</p>	 <p>Find more information on our scalable battery modules more...</p>	 <p>Advanced thermal management and hybrid system electronics for automotive vehicle needs and non-automotive energy storage more...</p>

RESEARCH & DEVELOPMENT	CUSTOMERS	GENERAL INFORMATION
		

www.johnsoncontrols.com/content/us/en/products/power_solutions/products/lithium-ion_technology.html

electric 2 of 2

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Cylindrical Cells

Prismatic Cells

MODULES



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SYSTEMS



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APPLICATION BRIEF:
**PANOPTIX[™] ENERGY
PERFORMANCE MONITOR**

The Panoptix[™] Building Efficiency Solution: See a Bigger Picture[™]

The Panoptix offering is a complete solution — a combination of software and services that more easily and cost-effectively helps you achieve optimized building performance and energy efficiency.

The **Panoptix Energy Performance Monitor** application helps you quantify the savings generated from energy efficiency projects based on benchmarked energy reduction forecasts.

Energy and Performance Monitor

- Creates energy baseline models and tracks savings from energy efficiency projects.
- Helps calculate energy and financial savings using an industry standard approach.
- Identifies key energy drivers for a single building or portfolio of buildings.

With Energy Performance Monitor, you can:

Monitor and measure energy use.

Energy Performance Monitor helps you track and identify key energy usage drivers and changes in energy use by reviewing data acquired from building systems, weather services and utility bills.

Conduct baseline analysis and forecast energy use.

Conduct a baseline energy assessment to estimate the energy use of a building. You can use the baseline data to set goals for implementing efficiency measures and view progress.

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 - Fan Coil Thermostat
 - Heat Pump Thermostat
 - Multi-Stage Thermostat
 - Zoning Thermostat
 - VAV Thermostats
 - Modular Room Control Thermostats
 - Electric Thermostats
 - N2 & LonWorks™ Network Resource Files
 - Thermostat Accessories
 - HVAC Valves & Ball Valves
 - Variable Speed Drives
 - HVAC Control Panels
 - Current Sensors & Transducers
 - HVAC Parts
 - HVAC Service
 - Central Plant Optimization™
 - Commercial HVAC Systems & Products
 - HVAC Enhancement Products
 - Modular Central Utility Plants
 - Rental Solutions
 - Refrigerant Recovery, Recycling & Storage
 - Building Management
 - Commercial Refrigeration
 - Industrial Refrigeration
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To speak with a sales support representative, please call: 1-800-445-4757

PROGRAMMABLE THERMOSTATS

Improving life in the great indoors

Comfortable temperatures, operating efficiency and energy efficiency savings all form part of an ideal building environment. Enjoy a great indoor experience with Johnson Controls' room thermostat products.

We offer easy-to-install, state-of-the-art technology, unsurpassed reliability and accuracy from each of our HVAC controls. Whatever the application, the best energy solutions start with Johnson Controls.

Our programmable thermostats are ideal solutions for single- and multi-stage applications: heat pumps, unitary roof top equipment with economizers, cabinet unit heater, perimeter heating/cooling, zoning and fan coil units.

To find out more about our thermostats, select one of the categories below:

- Fan Coil Thermostats
- Heat Pump Thermostats
- Staged Equipment Thermostats
- Zoning System Thermostats
- VAV Thermostats
- Single Room Thermostat - Modular Room Controls
- Electric Thermostats
- N2 & LonWorks™ Network Resource Files
- Thermostat Accessories

Contact Johnson Controls for more information on our room thermostat range or call 1 800 445 4757.



Johnson Controls supports and sponsors thermostat recycling programs in the U.S. and Canada. We are a member of the Thermostat Recycling Corporation (TRC), a not-for-profit organization that facilitates the collection and proper disposal of mercury-containing thermostats in the United States. TRC maintains a network of more than 3,400 collection sites nationwide. To find a collection point in your area, go to thermostat-recycle.org and enter your zip code.

Search Options

By Part or Keyword

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Search Results

Matching Part List for: "resistor"

Show: Items per Page << 1 of 1 >> Page #

Compare	Product ID	Description	Manufacturer
<input type="checkbox"/>	9001-01	RESISTOR	ROBERTSHAW
<input type="checkbox"/>	9001-03	RESISTOR	ROBERTSHAW
<input type="checkbox"/>	600-001	RESISTOR OR 10 REEL	UNI-LINE

<http://www.robertshaw.com/modules/catalog/SearchResults.aspx?mode=productsearch&prodID=resistor>

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Search Results

Matching Part List for: "temperature probe"

Show: Items per Page

Compare	Product ID	Description	Manufacturer
<input type="checkbox"/>	738A-A006-110	TEMPERATURE PROBE	ROBERTSHAW

Search Options

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Search Results

Matching Part List for: "temperature regulator"

Show: Items per Page << 1 of 1 >> Page #

Compare	Product ID	Description	Manufacturer
<input type="checkbox"/>	GE158A758SP001	TEMPERATURE REGULATOR	ROBERTSHAW
<input type="checkbox"/>	GE158A758SP002	TEMPERATURE REGULATOR	ROBERTSHAW
<input type="checkbox"/>	GE158A758SP005	TEMPERATURE REGULATOR	ROBERTSHAW
<input type="checkbox"/>	GE158A758SP022	TEMPERATURE REGULATOR	ROBERTSHAW
<input type="checkbox"/>	GE158A758SP059	TEMPERATURE REGULATOR	ROBERTSHAW
<input type="checkbox"/>	GEA58A758SP003	TEMPERATURE REGULATOR	ROBERTSHAW

<http://www.robertshaw.com/modules/catalog/SearchResults.aspx?mode=productsearch&prodID=temperature%20regulator>

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Search Results

Matching Part List for: "thermostat"

Show: Items per Page << 1 of 38 >> Page #

Compare	Product ID	Description	Manufacturer
<input type="checkbox"/>	271-3026-01	THERMOSTAT EA-5210	EATON
<input type="checkbox"/>	271-3029-01	THERMOSTAT EA-5208	EATON
<input type="checkbox"/>	271-3030-01	THERMOSTAT EA-5209	EATON
<input type="checkbox"/>	271-3031-02	THERMOSTAT EA-5212	EATON
<input type="checkbox"/>	271-3031-06	THERMOSTAT EA-9303	EATON
<input type="checkbox"/>	271-3031-07	THERMOSTAT-EA-3723	EATON
<input type="checkbox"/>	272-3112-01	THERMOSTAT EA-5182	EATON
<input type="checkbox"/>	272-3123-01	THERMOSTAT EA-0234	EATON
<input type="checkbox"/>	275-3140-03	THERMOSTAT ERT-03	EATON
<input type="checkbox"/>	275-3140-10	THERMOSTAT EGT-10	EATON

1 2 3 4 5 6 7 8 9 10 ...

Hot Runner Injection Mold Temperature Control Accessories



Mold Wiring Junction Boxes

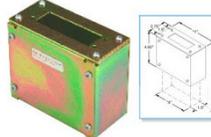
Mold Wiring Junction Boxes are mounted directly on the injection mold. The heaters and thermocouples are wired to the connectors and are ordered separately.

Mold Wiring Junction Box for Power Input Connectors

(for 5, 8, or 12 zone connectors)

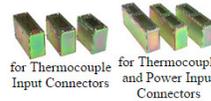
Part Number	"X"	"Y"	Price US Dollars
TKA25001	4.250"	4.875"	

for Power Input Connectors



Mold Wiring Junction Box for Thermocouple Input Connectors

Zones	Part Number	"X"	"Y"	Price US Dollars
5	TKA25005	4.250"	4.875"	
8	TKA25008	4.990"	5.614"	
12	TKA25012	6.052"	6.676"	



Combination Mold Wiring Junction Box for Thermocouple and Power Input Connectors

Zones	Part Number	"X"	"Y"	Price US Dollars
5	TKA25105	8.031"	8.655"	
8	TKA25108	8.843"	9.467"	
12	TKA25112	9.906"	10.530"	

Accessories



Closure Panel
Used to cover unused zones in mainframes. One per zone.
Catalog Number: **TKA29001**



Floor Stand
The floor stand is used to mount from one to four mainframes in a convenient and portable manner. All mounting hardware and casters are included.
Catalog Number: **TKA29002**

http://www.tempro.com/controls/HotRunr_Ju nct_Access.htm

How To Order	
Hot Runner Standard Accessories	
Choose the part number of the MX Hot Runner controller or accessory that best suits the needs of your application. Standard lead time is stock to 4 weeks.	<i>Please contact Tempco for further assistance.</i> Toll Free (888) 268-6396
<p><small>These major credit cards accepted</small></p>	

Introduction to Silicon Controlled Rectifier (SCR) Power Controllers

Click the **SCR** of choice below to see Features, Specifications and How To Order:



- ["A" Series--
Single Phase
15 through 70
Amp](#)
- ["B" Series--
Single Phase
60 through
1200 Amp](#)
- ["C" Series--
Three Phase
15 through 70
Amp
\(2 leg--Zero
Cross\)](#)
- ["D" Series--
Three Phase
60 through
1200 Amp
\(2 leg--Zero
Cross\)](#)
- ["E" Series--
Three Phase
60 through
1200 Amp
\(3 leg--Phase
Angle Fire\)](#)

SCR Power Controllers provide a relatively economical means of power control. SCR power controllers cost less and are more efficient than saturable core reactors and variable transformers. Compared to contactors, SCR power controllers offer a much finer degree of control and do not suffer from the maintenance problems of mechanical devices.

Features and Benefits of SCR's

- o **High reliability**
Because the SCR power controller is a solid-state device, it provides virtually limitless, trouble free

Optional SCR Features

- o **True Power Regulation/Current Limit**
It uses output voltage, current, conduction angle, phase shift, and power factor to monitor and regulate the output. It will provide output power that is constant, regulated and linear to the

Basic Control Modes

The power delivered to a load may be regulated or proportioned by SCR power controllers using either the zero-cross voltage switching (integral cycle) or the phase angle control

power controller is a solid-state device, it provides virtually limitless, trouble free operation with a minimum of maintenance.

Infinite resolution

Power, current or voltage can be controlled from zero to 100% with infinite resolution.

Extremely fast response

The SCR controller can toggle load power on and off rapidly, providing the means to respond quickly to command, load, and power supply changes.

The SCR

The SCR has two states, *On* and *Off*, and allows current to flow in only one direction. An SCR unit is composed of two SCRs arranged to control AC power. SCRs can remain in

Limit It uses output voltage, current, conduction angle, phase shift, and power factor to monitor and regulate the output. It will provide output power that is constant, regulated and linear to the command signal. This option includes an RMS current limit (adjustable from 35 to 125% of the unit's rating) and has a 0-5 VDC output that is proportional to the load power.

Over-Current Trip

Tempco's over-current trip is peak current sensing. The circuit will shut down the SCR within a half-cycle of AC current. It includes an automatic or manual reset that allows the user to select the reset mode after an alarm. A relay output is available for alarming or shutdown. Adjustable from 100 to 300% of the unit's rating.

RMS Current Regulation/Over-Current Trip

It will hold the output current constant regardless of the load resistance, based upon the command signal input. This option

power controllers using either the zero-cross voltage switching (integral cycle) or the phase-angle control mode. Each control mode has its own specific advantages and disadvantages and each application should be reviewed to determine the most compatible mode of control.

Distributive Zero-Cross Control

The term zero-cross or synchronous operation of SCR's is derived from the fact that the SCR's are turned on only when the instantaneous value of the AC sinusoidal waveform is zero. Zero-cross controllers can provide two rather distinctively different types of control: time proportioning control, and distributive control. The Distributive Control Technique combines power pulses of short duration to obtain the exact power level proportional to the

direction. An SCR unit is composed of two SCRs arranged to control AC power. SCRs can remain in the off state even though the applied potential may be several thousand volts; in the on state, they can pass several thousand amperes. When a small signal is applied the SCR will turn on in 10-100 microseconds. Once turned on it will remain on until the current through it is reduced below a very low value called the holding current. Basically, an SCR power controller consists of the following:

- ▶ Semiconductor power devices (SCR's and Diodes)
- ▶ A control circuit normally referred to as the firing circuit
- ▶ A means to dissipate the generated heat

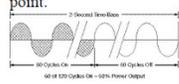
regardless of the load resistance, based upon the command signal input. This option includes an RMS current trip adjustable from 35 to 125% of the unit's rating.

- **RMS Current Limit/Over-Current Trip**

The output current can be adjusted to automatically limit or clamp the maximum RMS current available from the SCR power control. It is settable from 35 to 125% of the unit's rating. This option includes an RMS current trip adjustable from 35 to 125% of the unit's rating.- **Over-Temperature Thermostat**

These are bi-metal snap action thermostats that open or close when the heat sink's temperature exceeds its maximum operating temperature. Standard on all SCR

technique combines power pulses of short duration to obtain the exact power level proportional to the command signal or set point.



Phase-Angle Control

In phase-angle control the SCR unit is turned on at a certain phase angle of the AC power supply that provides the correct percentage of power. Power is regulated by advancing or delaying the point at which the SCR is turned on within each half cycle. Below is an example of this for 50% power output.

Phase-angle control provides a very fine resolution of power and is used to control fast responding loads such as tungsten-filament lamps or loads in which the resistance changes as a function of temperature

power controller consists of the following:

- ▶ Semiconductor power devices (SCR's and Diodes)
- ▶ A control circuit normally referred to as the firing circuit
- ▶ A means to dissipate the generated heat
- ▶ Protective circuits (fuses and transient suppressors)

125% of the unit's rating.

Over-Temperature Thermostat

These are bi-metal snap action thermostats that open or close when the heat sink's temperature exceeds its maximum operating temperature. Standard on all SCR power controls starting at 90 Amps. Specify NO or NC when ordering, or a NO thermostat will be included.

Load Unbalance Alarm

The unbalance alarm monitors and compares the current in each of the three phases. If the current deviates more than the setpoint allows, an alarm relay is actuated.

SCR Module Failure Alarm

This option monitors the voltage drop across each of the SCR's. Since most SCR's fail shorted (zero voltage drop) this is the most accurate method to detect a failed SCR module. A relay output is provided.

each half cycle. Below is an example of this for 50% power output.

Phase-angle control provides a very fine resolution of power and is used to control fast responding loads such as tungsten-filament lamps or loads in which the resistance changes as a function of temperature. Phase-angle control is required if the load is transformer-coupled or inductive.

Phase-angle controllers are typically more expensive than zero-cross controllers because the phase-angle circuit requires more sophistication than a zero-cross circuit. Phase-angle control of three-phase power requires SCR's in all three legs and is appreciably more expensive than zero-cross control, which only requires SCR's in two of the three legs.

