Temperature Control for Heated Clothing

High Performance/Professional Quality

Updated version of an old favorite

With over 25,000 units of the old version sold since 1995, the original OEM manufacturer is continuing with an updated version under the ZANE brand. And with our many years of design and manufacturing experience, we at ZANE have carefully blended the same professional grade materials and proprietary manufacturing techniques with new and practical improvements suggested over the years:

First, industry standard 5.5 x 2.5mm power connectors are added to make the ZANE Temperate Control 100 percent plug compatibility with all manufacturer's heated clothing and accessories using the same. The ZANE power connectors are specially engineered for high conductance under heavy use and difficult conditions, including gold plating for the socket contacts (see picture, above). Adaptor hardware is readily available to convert from older style connectors such as Widder, BMW, SAE, and cigarette.

We think you'll like the new cords. They're lightweight, glove-leather soft, kink-free, and so flexible you'll hardly know you're wearing them. When unneeded, they simply fold up for easy storage in a convenient pocket. Thick rubber grommets at the case entrance provide extra strain relief at this vulnerable point.

Repeating an optimal temperature setting is now quick and easy with the new laser-inscribed and enamel-filled graticule. At click-on, power delivery begins at 45 percent to skip the seldom used lower range and allow ultra-precise setting of the important upper range over a wide and infinitely variable 315° rotation.

Retained time-tested features include an oversized machined aluminum knob for easy adjustment with gloved hands. Because the knob rotates only a few hundredths of an inch over the case, extra protection is provided against accidental drops and impacts. Zero power is used in a tactile click-off position.

The case is precision cast of technology plastic/dense glass fibers for exact shape and high heat conductivity. Inner potting material is a mixture of industrial-grade epoxy and powdered stone for impact resistance, thermal conductivity, and long life.

Control circuitry is the same proven and patented Cmos technology as always -- delivering 99 percent of battery voltage at maximum setting while dissipating only a few thousands of a watt as waste heat. At the full 10A output, a powerful 81 amp mosfet driver is still at only 12 percent of rated capacity for high efficiency and long-term reliability.

Features

- Fusion of proven reliability and practical new improvements
- Industry-standard 5.5 x 2.5mm connectors for 100 percent plug compatible with all manufacturer's heated clothing using same
- New lightweight power cords are kink-free and glove-leather soft -- so flexible you'll hardly know you're wearing them
- New graticule for easy repeat of optimal temperature setting
- Quality, oversized machined aluminum knob allows easy adjustment with gloved hands. Rotary adjustment over a wide and infinitely variable 315° range for exact setting, tactile on/off
- Proven, patented Cmos control circuitry with extra heavy mosfet driver. Up to a powerful 134 watts (10 amps at 13.4 volts) of fuse-protected power available

Applications

- Mobile: Motorcycle, snowmobile, ATV, forklift, golf cart, boat, tractor
- Winter sports: Enjoy cold weather activities in warmth via a portable battery pack
- Outdoor winter tasks: Plug into a stationary source of shock-free low-voltage dc power for increased comfort and safety

Protected under US Patent 5,237,263
Pat Pend
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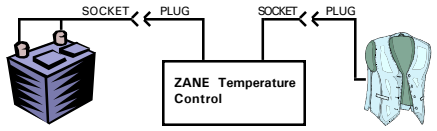
web: www.zaneinc.com

Wiring Diagram



ZANE
Low-Voltage Power Systems

Technical Specifications

Mode of Operation
Continuously variable pulse width modulation (pwm). Adjustment range is from about 45% pwm at click-on through 100% pwm at full setting

Supply Voltage (dc power only)
6V Battery Version: 4 to 12vdc working, up to 15vdc momentary
12V Battery Version: 8 to 15vdc working, up to 19vdc momentary

Continuous Output Current
Fuse limited to 10A. Full rated current down to -20F

DC-DC Conversion Efficiency
About 99%

Load Types
Optimized for resistive heating loads

Reverse Polarity/Connection Protection
Input leads can be reverse connected without damage. The load can be disconnected without damage. Unit can be energized with knob at any setting without damage

Short/Open Circuit Protection
Output is protected by user-installed 10A fuse. Connections are 100% soldered to minimize possibility of open connection. All units 100% factory tested

Transient Protection
Resistive/capacitive filtering

Cords
Each cord is 18" (458mm) long including connector, and has a 0.25" (6.5mm) round cross section to minimize or eliminate the kinking associated with twin conductor cable. Internal 16-ga conductors (positive and negative) are each of extra-fine stranded copper (107 count) and individually pvc jacketed for extra strain relief. The outer jacket is specially formulated and molded PVC requiring no batting material for a lump-free surface

Case
Case is 2" long x 0.9" wide x 1.15" high (50 x 23 x 29mm). Material is diallyl phthalate plastic to MIL-M-14 with dense glass fill. Potting material UL Listed, industrial grade epoxy mixed with powdered stone

Weight
4.62 oz (130gm)

Case Markings (front and rear)
Laser engraved and enamel filled

Connectors
Standard 5.5 x 2.5mm socket-and-plug power connectors (sometimes called "coax" connectors). Socket contact surfaces are gold plated for increased conductance and long wear. Polarity is standard with - (negative) outer sleeves for both socket and plug

Potentiometer
Dual wiper blades provide skip-free performance over a 315^{o} rotational range. Sealed on/off switch toggles at about 5mA for a service life of about 50,000 cycles. Rubber "O" ring under knob dampens unwanted rotation and provides reliable water resistance

Power Dissipation of Cmos Control Circuitry
About 14mW. No-load current draw is about 1mA. Nil power used in click-off position

Waste Heat
The approximate 1.25W maximum waste heat generated by Cmos control circuitry and mosfet driver is dissipated through heat-conductive potting material and case. In normal use the case becomes no more than warm to the touch

Line Regulation
Directly proportional to supply voltage

Load Regulation
Generally less than 3% from minimum load to maximum load at any setting

Voltage Drift
Nil with steady input voltage

Accessories Included
Detailed installation instructions, 10A blade-type automotive fuse x2, 7" x 9" plastic bag with zip top

Warranty and Disclaimer:

Although Manufacturer warrants the goods, so far as the same are of its manufacturer, against defects in materials and workmanship under normal use and service for which they were designed for a period of one (1) year after invoice date, Manufacturer's obligation under this warranty are limited, at its option, to the replacement of the part or parts determined to be defective or to the refund of the purchase price.

Claims made in this data sheet are based on extensive testing and are believed to be true. Manufacturer shall under no circumstances be liable for any special, indirect, incidental, or consequential damage owing to failure of the goods. Manufacturer makes no warranty of fitness for a particular purpose or merchantability or any other warranty, oral or written, expressed or implied, except as specifically set forth herein. Do not use ZANE products as critical components in life support devices or systems, aircraft, or other hazardous applications. Quotation, order acknowledgment, purchase, etc. does not grant or imply a license under any present or future patents owned by seller except to extent purchases are made from seller.

Any goods returned under warranty must be returned freight prepaid to ZANE International Inc., Minden, NV.

Temperature Control for Heated Clothing

Part #	UPC Number	Input Voltage	Maximum Current/Watts
ATC-48L-6V	29000	6V (nominal)	10A fused/60W at 6vdc
ATC-48L-12V	29100	12V (nominal)	10A fused/120W at 12vdc

ZANE International, Inc * 2436 Precision Drive #B * Minden, Nevada 89423 * USA * 775/267-5295 * FAX: same #