ELECTRODUCT DUCT HEATERS & ELEMENT BANKS

- Avon Electric Ltd has manufactured “Open Coil” Electric Heating Elements since 1939.
- The formula developed in the 1940s remains unchanged to this day.
- ELECTRODUCTs are *assembled & tested* by Registered Electricians not Process Workers.

OPEN COIL ELEMENTS

ELECTRODUCT open coil elements deliver almost instant & evenly distributed heat, cause almost no restriction to air flow and enable very large *capacity to space* ratios to be easily achieved. “Damp terminal” failures common with Magnesium Oxide insulation never occur.

ELECTRODUCT elements do not suffer earth faults due to dampness & condensation (even if saturated).

As testament to reliability, safety and capability, Avon’s largest element bank, a 6,450 kW Malted Barley Kiln Dryer, operated continuously from 1988 to 2001 (when the Canterbury Malting Company closed). Three ELECTRODUCTs totaling 6.45 MW were located directly in the fan discharge air at a velocity of 18 m/sec, and evaporated 90 tonnes of water per day, every day, for 14 years, with no ELECTRODUCT downtime.

PORCELAIN ELEMENT SUPPORTS

The “heart” of ELECTRODUCT is the patented steatite ceramic support bushing insulators, which have great impact strength and high dielectric properties. Heavy gauge open coil elements are firmly supported without any tension, and able to move freely in the porcelain bushes. Tension, a common cause of failure in open wound element coils, is not a factor with ELECTRODUCT.

The Steatite bushings are suitable for continuous operation at 800°C. Normal mechanical vibration and air stream buffeting are not a factor.

LOW WATTS DENSITY + HEAVY GAUGE RESISTANCE WIRE = LONG LIFE

Watts density in ELECTRODUCTs is limited to comply with temperature limitations as in AS3102. Even lower watts densities are offered for convection or other low air flow applications. The resistance element wires used in ELECTRODUCTs for HVAC cannot corrode. Special wire types are available where corrosion may be a factor (process heat applications). Oversized element terminal bolts are standard, and prewired to “user friendly” terminals within the terminal compartment.

ELECTRODUCT FRAME

ELECTRODUCT frames are designed for the exact application, are self supporting, and normally made of fabricated galvanised steel sheet, which complies with the durability clauses of NZBC B2 even as fresh air tempering heaters in corrosive seaside installations. Frames of 304, or 316 Stainless Steel are optional. Frames & mountings are designed to client specification. Some examples are illustrated herein. Others on our website. Specials on request.

The terminal compartment is sized to dissipate by convection, radiation, or forced air, any heat generated by mutual induction of components within. No element heat is transmitted or conducted into the terminal compartment. Special terminal compartments for indoor or outdoor locations are also available (with IP ratings specified).

CONTROLS

ELECTRODUCTs can be supplied “*to bare terminals only*” this means that the element bank includes safety controls only, which are factory prewired to DIN terminals within the terminal compartment.

Full control packages are also offered, with mechanical contactors or SSR control, mechanical or electronic thermostats, fused control circuits, integral circuit breakers, etc. Virtually any specification can be met, and usually supplied fully prewired, up to and including main On/Off switch and remote control terminals.

OVERHEAT & SAFETY PROTECTION

*Who can guarantee that a contactor controlled by a manual reset over-temperature thermostat will open when the coil is de-energized by the manual reset thermostat ? If a jammed contactor causes a fire, the system **did not comply** with AS3102, or the durability provisions (possibly 15 years), of the NZBC Section B2.*

Because ***jammed contactors cause fires***, the individual elements in every ELECTRODUCT have a dedicated fusible link as "back up protection of last resort". One manual reset over-temperature thermostat cannot protect a large capacity multi-stage element bank. The effects of wind pressures on buildings or updraft duct installations may require additional or duplicated overheat thermostat protection to sense excess heat in the most unlikely places (ie … upstream duct overheat protection is very common). A safety failure in an element bank can result in litigation & cost your business, *AVON*'s industry experience is unmatched --- we know how to design element banks !!.

***AVON* Electric Ltd has NEVER had an insurance claim due to product malfunction**

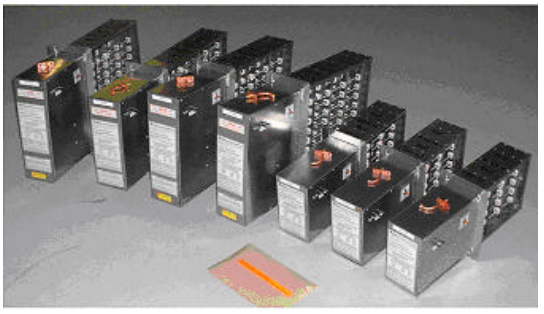
INSTRUCTIONS, WIRING DIAGRAM, LABEL & SERIAL NUMBERS

Avon believes that HVAC componentry, which can cause fires and bankrupt HVAC installers, should be taken seriously. That's why every ELECTRODUCT is individually serial numbered and supplied with a detailed installation instruction folder, (and operating instructions) relating to that serial number, and marked with permanent user friendly labels engraved and etched. A detailed wiring diagram, with dedicated serial number is provided for each individual ELECTRODUCT Element Bank. Since 1980 Avon has maintained ELECTRODUCT "as built" records by serial number. Current practice is digital "as built" photo files for every product.

STANDARDS COMPLIANCE

ELECTRODUCTs comply with, and exceed, the requirements of AS 3102:1983 and the new AS/NZS 3102:2002.

Every proprietary item installed in any ELECTRODUCT Element Bank is compliance certified by the specialist manufacturer ie… diaphragm type differential air switch, thermostats, fusible links, fan "run-on" thermostat, manual reset over-temperature thermostats, insulators, and materials. Insulation materials (fibreglass & 1000°C ceramic fiber insulation blanket) may make ELECTRODUCT Element Banks a few dollars more expensive than closed cell foam, but will not disintegrate or evaporate if ever called upon to protect adjoining combustibles from excessive heat in a fault condition.
We take litigation avoidance, safety & risk management very seriously.



SPECIFICATIONS

To obtain an ELECTRODUCT quote, fax or e-mail the specification. For a *design build* project, visit **www.avonelectric.co.nz**, complete the information quote form – and e-mail AVON directly for a detailed, obligation free quotation.

OTHER APPLICATIONS & PRODUCTS

In addition to ELECTRODUCTs for HVAC applications AVON manufactures ELECTRODUCTs for high temperature process heaters with hundreds of proven installations. Any kW capacity is feasible with the unique design of ELECTRODUCT.

AIR to AIR HEAT EXCHANGERS -- HEAT RECOVERY VENTILATORS (HRVs)

Capacities from 20 l/s to 20 m³/s. HRVs can eliminate Element Banks, reduce installed Air Con capacity, (summer & winter) and save your customer ongoing energy costs. Next time you consider an installation which requires substantial fresh air ventilation with long hours of operation, call 0800-DRY-AIR and ask for an HRV proposal.

CLEANAIRE HRVs compliment your current product lines. For Healthy Home Ventilation, see www.dryair.co.nz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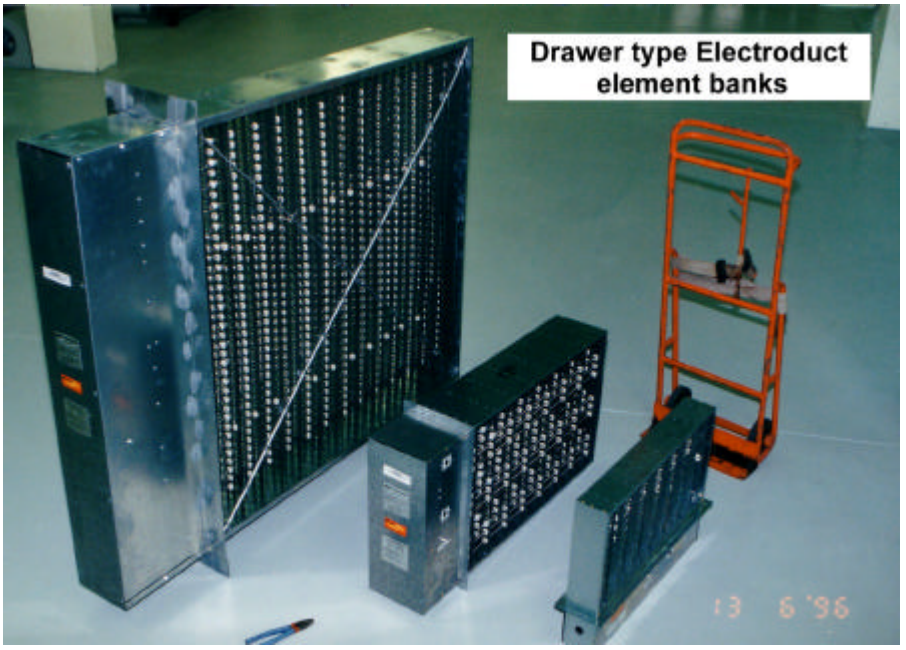
element banks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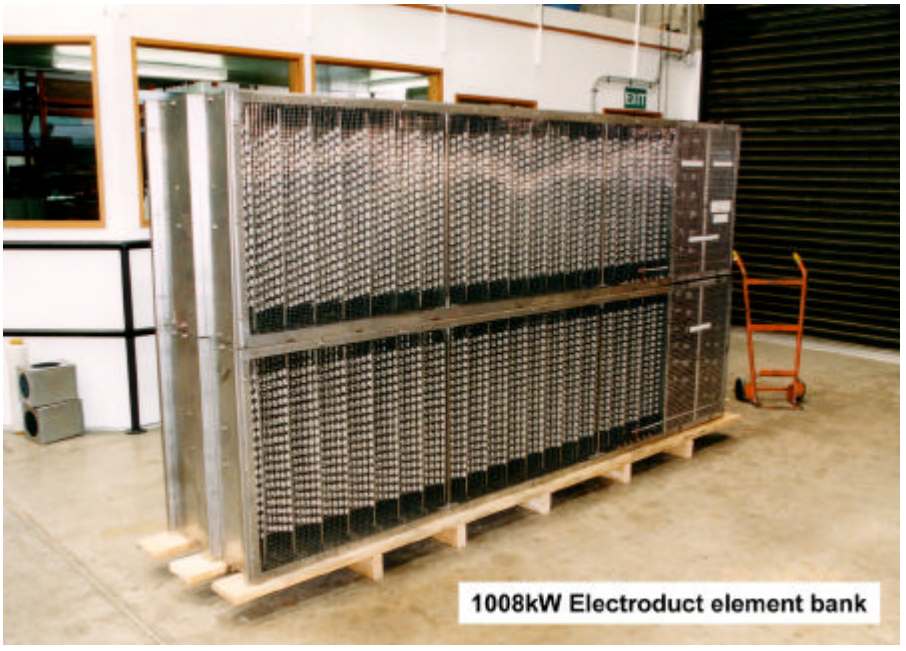
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