



## • Enclosure Cooling Solutions •



**Air Conditioners • Heat Exchangers  
Fans • Blowers • Enclosure Accessories**





## ***Solve your enclosure cooling problems!***

### ***KOOLTRONIC offers:***

➤ ***Large inventory of Air Conditioners, Heat Exchangers, Blowers and Fans***

➤ ***Most products RoHS compliant***



➤ ***1 year Enhanced Warranty***

➤ ***NEMA 12, 3R, 4 & 4X models available in 115, 230 & 480 Volt***

➤ ***Complete thermal management solutions***

➤ ***Free Sizing Tools: [kooltronic.com/guide](http://kooltronic.com/guide)***

➤ ***Custom-design capability***

➤ ***Celebrating over 60 years as the industry leader in enclosure cooling***

➤ ***Made in the USA***



#### ***SERVICE IS OUR COMMITMENT***

At KOOLTRONIC, our goals of excellence and responsiveness have been key to customer satisfaction. We are constantly seeking ways to further improve our performance. If you are unable to find the answer to your problem in this brochure, if you think your application requires a unique design, if you have any questions regarding your cooling requirements or cooling problems in general, please contact your Regional Sales Manager:

Pennington, New Jersey  
**(609) 466-3400**  
FAX (609) 466-1114

**We welcome the opportunity to be of service to you.**

**[kooltronic.com](http://kooltronic.com)**

**accessories & options**

- Adapter Plates
- Compressor Heater
- Condensate Evaporator Kit
- Deep Drain Pan Kit
- Enclosure Heater
- Filter Recoating Adhesive
- Internal Corrosion Protection
- Lifting Eyes
- Low Airflow Detector
- Low Ambient Kit
- Mounting Hinge
- Programmable Thermostat
- Replacement Filters
- Short Cycle Protector
- Special Motors, Line Cords or Connectors
- Special Materials or Finishes
- Stainless or Aluminum Cabinet
- Temperature Alarm
- Weather Protection Kit



**POPULAR MODELS ARE STOCKED AND READY TO SHIP**

**KOOLTRONIC** also designs and manufactures a variety of Air Conditioners to meet *unique* specifications. We invite your inquiries about our modification and custom-design capabilities.

*For specific information:*  
**CALL 1-800-321-KOOL (5665)**  
**or FAX 609-466-1114**

**kooltronic.com**

**kooltronic.com**  
**E-Mail: sales@kooltronic.com**

*Some options may not be available on selected models.  
Some options are available as standard features on selected models.*

**Kooltronic offers these services, located at our Pennington, NJ headquarters, for your use:**



Environmental test chambers.



Powder paint facilities.

**kooltronic green practices**

KOOLTRONIC has always enjoyed a proud tradition of engineering and producing the highest quality products available while maintaining environmentally-friendly industrial practices. In addition to a wildlife habitat, use of ozone-friendly refrigerants and a stringent recycling program, KOOLTRONIC is currently powered by approximately 4,000 solar panels, which enable the KOOLTRONIC facility to receive 90% of its electricity through solar power energy. This independence from non-renewable energy sources is an example of KOOLTRONIC's dedication to "green" technology, and evidence that it is an environmentally-friendly organization with an eye toward the future.



Kooltronic, Inc. Corporate Headquarters, showing approximately 4,000 solar panels in roof top array and parking lot canopies, which provide the facility with 90% of its energy requirements on any given day.

**hazardous location series**

**U.S. Patent No. 9,157,670 B2**

**NEMA  
TYPE 12, 3R & 4/4X  
MAINTAINED**



The patented **Hazardous Location Series** offers capacities up to 24,000 BTU/H in single and 3-phase power. Many features, such as a programmable thermostat, compressor short cycle protector and Hi/Lo temperature alarm are standard. Utilizing the enclosure's existing purge system, these units are offered at a lower cost and are easily maintained when compared to traditionally designed hazardous location units.

- All models UL Listed per UL 484, Special Purpose Air Conditioners
- All models UL Recognized per NFPA 496: 2013, Purged and Pressurized Enclosures for Electrical Equipment
- Meets NEC Class I, Division 1, Groups A, B, C and D and Class I, Zone 1 Groups IIA, IIB plus hydrogen and IIC Hazardous Locations when used with an approved Type X Purge System on the electrical enclosure
- Meets NEC Class I, Division 2, Groups A, B, C and D and Class I, Zone 2 Groups IIA, IIB plus hydrogen and IIC Hazardous Locations when used with an approved Type Z Purge System on the electrical enclosure
- All models are designed to withstand shock and vibration in two different planes for a minimum of 4 hours per plane at 1G acceleration
- Temperature Classification is T-4, 275°F/135°C
- Maintains NEMA Type 12, 3R & 4/4X Ratings per UL50, Cabinets and Boxes

Typical applications include oil refineries, paint and varnish manufacturing plants, petrochemical sites and hazardous materials storage facilities. These stainless steel units are used where hazardous gases may be present and are also suitable for corrosive environments.

The **Guardian** and **GuardianX Series** indoor/outdoor air conditioners are designed specifically for NEMA 4 and 4X enclosure applications that require washdown or are subject to outdoor storm conditions.

All **Guardian** models have a NEMA 4 Rating. The **GuardianX**, with a NEMA 4X Rating, is offered with a Stainless Steel Shell and Internal Corrosion Protection.

With Epoxy-coated condenser coils and tubing, the closed-loop cooling system of the **Guardian Series** offers added security by providing an operating environment safe from harsh ambient conditions.

The **Guardian Series** consists of air conditioners with heights from 15 to 60 inches, offering capacities from 1,000 to 26,000 BTU/H. In addition to the list of standard features, these **Guardian Series** Air Conditioners are also available with a wide range of accessories and options, including compressor short cycle protector, temperature alarm and heater kit.

The features engineered into the **Guardian/GuardianX Series** make them a tamper-resistant choice for external applications. With all models UL/CUL Listed, the **Guardian Series** is an excellent choice for telecommunications, wastewater treatment, food and beverage and other challenging applications.

**guardian/guardianX  
series 4 or 4x**



**NEMA  
TYPE 4 OR 4X  
MAINTAINED**

**guardian/guardianX  
series 480 volt 4 or 4x**



**NEMA  
TYPE 4 OR 4X  
MAINTAINED**



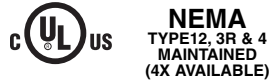
The **Guardian** and **GuardianX 480 Volt Series** consists of indoor/outdoor air conditioners with heights from 24 to 60 inches, offering capacities from 3,000 to 26,000 BTU/H. These air conditioners have been engineered to operate under the most demanding industrial applications. The components used in these models have been specially designed and tested to maintain cooling efficiency in temperature controlled enclosures in bottling plants, the automotive industry and other commercial/manufacturing applications. With all models UL/CUL Listed, the **Guardian Series** is also an excellent choice for telecommunications, wastewater treatment, food and beverage and other challenging applications. The features engineered into the **Guardian/GuardianX 480 Volt Series** make them a tamper-resistant choice for external applications.

These air conditioners are also available with a wide range of accessories and options, including compressor short cycle protector, temperature alarm and heater kit.

The **SlimKool Series** Air Conditioners feature a small footprint and narrow design for enclosure cooling in smaller cabinets. All **SlimKool Series** models are 12 inches wide, a design feature that provides more flexibility for the increasingly narrow electrical enclosures common in industry today.

With heights from 28 to 43 inches, the **SlimKool Series** offers a cooling range from 4,000 to 11,000 BTU/H. Designed to satisfy a growing demand for enclosure cooling in smaller cabinets, these narrow units offer great cooling capacities in small packages.

These units are available in 115, 230 and 480 Volt, with NEMA ratings of 12, 3R, 4 and a 4X version offered with a stainless steel shell. From indoor washdown to outdoor corrosive environments, this versatility makes the **SlimKool Series** a perfect choice for virtually every application.



**slimkool indoor/outdoor series**

**nema 12, 3R & 4 maintained**

**(4x available)**



**115, 230 & 480 volt**

**water cooled**



**Water-Cooled Air Conditioners** are recommended for applications with extreme ambient temperatures and/or severely contaminated environments, where a reliable supply of cool, clean water is available.

Since ambient air is sealed out of the air conditioner as well as the enclosure, no contaminants can enter and there are no filters to clean. These units range from 28 to 47 inches, with capacities from 4,000 to 12,000 BTU/H.

All units use CFC-free refrigerant, and have UL/CSA Recognized components. Protective waterflow controls, built into the units, provide an extra measure of safety.

**horizontal air-cooled rack mounted**

The **RML Series Horizontal Rack-Mounted Air Conditioners**, with a capacity of 5,000 BTU/H, offer a choice of up to five airflow patterns, allowing installation in any location within a data rack. Using supplied baffle plates the **RML** can easily be configured for a variety of applications. In addition, the **RML** features a unique condenser airflow design with both intake and outlet at the front of the unit.



**RML**  
5,000 BTU/H

**horizontal air-cooled top mounted**



**NEMA**  
TYPE 12 & 3R  
MAINTAINED



**RTL**  
6,000 - 12,000 BTU/H

The Kooltronic versatile line of **Top-Mounted Air Conditioners** provides a full range of cooling capacities where space or other limitations prevent panel or internal rack mounting. **The Top Mount Air Conditioners** are offered in models from 2,500 to 12,000 BTU/H. These **Top Mount Air Conditioners** occupy no internal cabinet space, and are available with a wide range of accessories and options.

The **RTL Top Mounted Air Conditioner**, with rated capacities from 6,000 to 12,000 BTU/H, comes with digital temperature display and a low temperature control thermostat, all in a stylish cabinet.

**micro-mini**



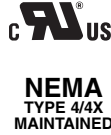
**Micro-Mini Air Conditioners** offer a cooling capacity of 1,000 BTU/H, in 14" width, including side flanges. The **Micro-Mini** is ideal for low-capacity applications with space limitations, such as a kiosk. **Micro-Mini Air Conditioners** are suitable for applications that have low static pressures, where fans can provide adequate airflow. Mounted on any vertical panel of equipment enclosures, they occupy minimal floor space and no cabinet space. The **Micro-Mini** offers a Programmable Thermostat as a standard feature.

Gasketed mountings and the closed-loop design seal out moisture and contaminant-laden ambient air. Powerful Kooltronic-designed centrifugal blowers circulate clean, cool air throughout the enclosure.

**Micro-Mini Air Conditioners** use an environmentally friendly refrigerant, are UL/CUL Listed and are tested and approved by UL for NEMA 12 enclosures.



**NEMA**  
TYPE 12  
MAINTAINED



### integrity nema 4/4x air-to-air

The Patented *Integrity NEMA (KNHX) 4/4X Heat Exchangers* are intended to complement the *Integrity NEMA 4/4X Air Conditioner* product line for those applications that require the protection of closed-loop cooling, but can tolerate operating temperatures somewhat above the ambient.

Tested and rated by Underwriters Laboratories, these uniquely designed stainless steel heat exchangers provide a clean, cool internal environment and also protect against the hazards specified for both **Indoor** and **Outdoor NEMA 4 and 4X Enclosures**.

These units can be mounted interchangeably with KOOLTRONIC *Integrity NEMA 4/4X Air Conditioners* for maximum flexibility in selection, upgrading or reducing cooling performance, if requirements change.

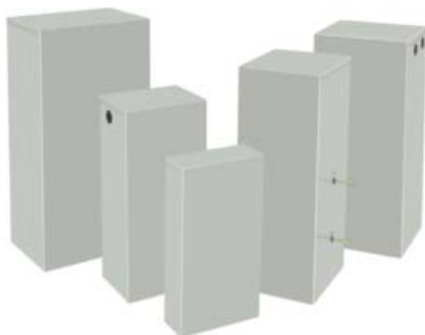
### knhe nema 4/4x water-to-air

The *KNHE Series Water-to-Air Heat Exchangers* provide cooling in a closed-loop system where a reliable source of clean, cool water is available. The *KNHE Series* is designed primarily for use in harsh environments with cooling requirements in excess of the capabilities of air-to-air heat exchangers. They are particularly useful in highly contaminated environments that would require frequent cleaning or changing of ambient air filters. The *KNHE Series Water-to-Air Heat Exchangers* can furnish greater cooling capacities than air-to-air models, depending on water temperature and rate of flow. Ambient air is sealed out; heat transfer surfaces remain clean. Models are available in heights from 24 to 60 inches, offering capacities from 33 W/°F at 1 GPM to 215 W/°F at 4 GPM.



### kphe water-to-air

The *KPHE Series Water-to-Air Heat Exchangers* provide cooling in a closed-loop system where a reliable source of clean, cool water is available. The *KPHE Series* is designed primarily for use in harsh environments with cooling requirements in excess of the capabilities of air-to-air heat exchangers. They are particularly useful in highly contaminated environments that would require frequent cleaning or changing of ambient air filters. The *KPHE Series Water-to-Air Heat Exchangers* can furnish greater cooling capacities than air-to-air models, depending on water temperature and rate of flow. Ambient air is sealed out; heat transfer surfaces remain clean. Models are available in heights from 20 to 32 inches, offering capacities from 20 W/°F at .25 GPM to 112 W/°F at 2 GPM





### single centrifugal

**Single Centrifugal Blowers** are designed for performance against low to moderate static pressures. They are available in capacities ranging from 60 to 425 CFM. Easily installed, they can be mounted in any orientation for maximum cooling efficiency.

These popular blowers are a low cost alternative for a multitude of applications. They are the workhorses of electronic cooling and are widely used in other non-electronic applications.

### high pressure centrifugal

**High Pressure Centrifugal Blowers** fill the performance range between **Single Centrifugal Blowers** and **High Pressure Radial Blowers**. They have been specifically engineered for applications requiring higher airflow against somewhat lower static pressures than **High Pressure Radial Blowers**.

These high pressure blowers are available in a variety of sizes and output capacities, (from 160 to 475 CFM) to satisfy many airflow/static pressure requirements.



### high pressure radial

This series of blowers was specifically designed for maximum efficiency in the movement of moderate volumes of air against substantial static pressures. Applications include cooling computer disk drives, densely-packed enclosures, forcing gas-air mixtures into small boiler combustion chambers, and in chromatography and pollution sampling equipment, to name just a few.

**High Pressure Radial Blowers** are available in a choice of sizes and capacities, ranging from 55 to 265 CFM. Full performance in any mounting position and UL/CSA ball-bearing motors add to the versatility and ruggedness shared by all KOOLTRONIC blowers.

### double centrifugal



**Double Centrifugal Blowers** are designed to provide greater airflow than the related single blower series, in the same types of low to moderate static pressure applications. Similarly, they are easily installed and operate with equal effectiveness in any mounting orientation. This series offers capacities from 155 to 1200 CFM to satisfy a wide variety of cooling requirements. Together, single and double centrifugal blowers are the backbone of forced convection air cooling.

These **Double Centrifugal Blowers** and the **Quadruplex Centrifugal Blowers** are the exclusive air movement components in virtually all of the KOOLTRONIC Packaged Blowers, Heat Exchangers and Air Conditioners.

### quadruplex centrifugal

**Quadruplex Centrifugal Blowers** move more air with less noise and greater efficiency than comparably sized double centrifugal blowers. The optimum wheel width-to-diameter ratio and the specially designed housings, which minimize inlet losses, also contribute to an even distribution of airflow for maximum cooling. A unique motor mount design isolates the drive motor and rotating components from the blower structure for smooth, quiet operation with minimum vibration. **Quadruplex Centrifugal Blowers** are suitable wherever wide-band air movement is required and are especially useful for applications such as cooling printed circuit cards and other components in densely packed electrical cabinets.



### packaged twin



**Standard Twin Packaged Blowers** achieve exceptional performance through use of the largest possible blower housings and wheels. Each contains a quadruplex centrifugal blower powered by a single precision ball-bearing motor.

These widely-used **Standard Twin Packaged Blowers** deliver air from more than 50% of their 17" width, while conventional blowers deliver air from only about 30%. Internal neoprene isolation mounts reduce transmission of vibration and AC hum to the enclosure. Long service life and trouble-free performance are assured through the use of precision ball-bearing motors in all models and by the dual inlet quadruplex design, which uses intake air to cool the motor.

### recessed twin

Where panel space is a critical element in the design and packaging of an electronics system, **Recessed Twin Packaged Blowers** provide maximum air delivery using a minimum of panel height. Extending into the often wasted space in the base of the cabinet below the panel mounting area, these recessed units save a full 1¼ inches of panel height. There is no loss of airflow because the size of the open grille design still provides sufficient area to meet air delivery requirements.

The **Recessed Twin Packaged Blowers** utilize the same powerful quadruplex blowers featured in **Standard Twin Packaged Blowers**. They provide the same excellent performance and service-life characteristics.



### emi/rfi-shielded



KOOLTRONIC achieves a high degree of EMI attenuation by the use of proven techniques, scrupulous production and quality controls. No conductive plastics are used, and a full mounting flange provides a continuous conductive surface for interface with the user's cabinet. **EMI-Shielded Packaged Blowers** are available in capacities from 130 to 800 CFM.

The EMI/RFI shield conforms to the latest technology in attenuation of electromagnetic interference. This series combines the shield with **Standard Twin Packaged Blowers**. In addition, the shielded front end can be incorporated into the entire broad line of KOOLTRONIC Packaged Blowers, as an option, with a few dimensional changes. This same front end can also be used as an enclosure accessory.

EMI/RFI-shielded fronts, in packaged blowers or used separately, do not reduce air delivery.

### broad discharge

**Broad Discharge Packaged Blowers** combine a quadruplex centrifugal blower with an internal plenum chamber to provide an even distribution of air delivered across the entire width of the cabinet. This permits installation directly beneath the electronics for overall cooling of rows of printed circuit cards or similar electronic components, without need for a space-consuming external plenum chamber.

The blower assembly that provides the cooling air includes the same quality features as in the **Twin, Recessed and EMI/RFI-Shielded Packaged Blowers**.





**high performance fans**



**thin fans**

Capacities:  
210 to 750 CFM

The KOOLTRONIC family of fans offers versatility and power in small packages. **High Performance Fans** are ideal for situations where severe space limitations and/or higher static pressures prevent the use of conventional fans. Densely packed printed circuit board arrays and duplicating equipment are examples of some of the environments for which **High Performance Fans** were designed.



Capacities:  
385 CFM



**Thin Fans** are uniquely compact and versatile, and are unsurpassed for their economy of space. These fans can be mounted in virtually any position, internally or externally, and often can be located in the base or top of the enclosure, leaving side walls and all or most of the panel space free.

**packaged fans**



**Packaged Fans** offer high airflow in a very thin package. These units can be mounted vertically or horizontally and require little internal cabinet space, leaving virtually the entire cabinet free for components or power supplies. Filters are easily removable for cleaning or replacement.



Capacities:  
105 to 1310 CFM



Whether you chose **High Performance, Thin or Packaged Fans**, all of the units share characteristics beside small size for use in restricted space:

All models can pressurize or exhaust, are exceptionally quiet during operation, and all feature UL/CSA ball bearing motors. All units feature rugged construction with a baked powder finish, and all have available a complete line of accessories.



**fantrays**

**kooltray II**



Capacities:  
Up to 105 CFM per fan

The **KoolTray II** delivers cooling air to troublesome hotspots by localizing fan placement to the heat generating area(s). With its 1¾" single-U height, it fits right under card racks or near heat producing sources. Standard units are available in 1, 2 or 3 row models. These units feature low sound level, lighted power switch and optional LED failure information.

### advantage series filter fans

In response to industry demands for small versatile cooling units, Kooltronic offers the *Advantage Series Filter Fans*. Unique to the series is a clean, linear design, characterized by an extremely flat profile, which keeps the unit from protruding from the cabinet wall.

The *Advantage Series Filter Fans* offer convenience, versatility and reliability:

**Fast Mounting:** With elastic hooks and an integrated seal, the *Advantage Series Filter Fans* can be mounted easily into the opening provided on the panel. There is no need for extra screws or preparation.

**Wide Range of Mounting Dimensions:** The precise planning of the plastic hooks and gaskets allow the fans to be mounted in openings with a tolerance range of 0.059 inches [1.5mm] and a plate thickness of between 0.039 inches [1.0mm] and 0.098 inches [2.5mm] (individual models may vary).

### options

*Advantage Series Filter Fans* can be supplied with reverse airflow direction. RAL 7035 (Light Grey) is standard color. Fans are also available in RAL 9005 (Black). Filters and grille assemblies are also sold separately.

### features

*Advantage Series Filter Fans* offer convenience, versatility and reliability. They are available in a variety of sizes and airflows, as well as a wide range of mounting dimensions. With elastic hooks and an integrated seal these **NEMA 12** Rated *Advantage Series Filter Fans* can be mounted easily into the opening provided on the panel. There is no need for extra screws or preparation.

#### kbff08



29 CFM\*  
4" H x 4" W x 3" D

**NEMA**  
TYPE 12  
MAINTAINED

#### kbff12



46 CFM\*  
6" H x 6" W x 3" D

**NEMA**  
TYPE 12  
MAINTAINED

#### kbff15



158 CFM\*  
10" H x 10" W x 5" D

**NEMA**  
TYPE 12  
MAINTAINED

#### kbff13



76 CFM\*  
8" H x 8" W x 4" D

**NEMA**  
TYPE 12  
MAINTAINED

#### kbff20



341 CFM\*  
13" H x 13" W x 6" D

**NEMA**  
TYPE 12  
MAINTAINED

\* Fan with grille airflow.

### knp40fl



**NEMA**  
TYPE 4 OR 4X  
MAINTAINED

106 CFM\*  
18" H x 10" W x 5" D



## guardian/guardianX 4 or 4x series filter fans

The *Guardian/GuardianX Series* line of filter fans consists of the *KNP40FL* (106 CFM\*) and the *KNP60FL* (290 CFM\*). All *Guardian Series Filter Fans* have a *NEMA 4* Rating. The *GuardianX Series Filter Fans*, with a *NEMA 4X* Rating, are offered with a Stainless Steel Shell. A perfect choice for dissipating high heat loads economically, the *Guardian/GuardianX Series Indoor/Outdoor Filter Fans* are needed for washdown, wastewater treatment or other challenging indoor or outdoor applications.

### knp60fl

**NEMA**  
TYPE 4 OR 4X  
MAINTAINED

290 CFM\*  
18" H x 10" W x 5" D



### options

*Guardian/GuardianX Series Filter Fans* can be supplied with reverse airflow direction. Other voltages, both AC and DC, are available. Replacement filters are available, and an optional grille assembly is recommended.

### features

Standard features for the *Guardian/GuardianX Series Filter Fans* include integrated fan guards and sealing gasket, NEMA 4 or 4X Rating, UL/CSA Shielded ball bearing motors and IP55 filter protection. These filter fans also feature secure mounting and a baked powder finish. Most assemblies are ETL Approved.

## sentry series knp100f filter fans

The *Sentry Series KNP100F Filter Fans* offer the versatility and security of indoor or outdoor use. The *Sentry Series Filter Fans* have a *NEMA 3R* Rating and are a perfect choice for dissipating high heat loads economically. These filter fans are also available in a variety of voltages and protection levels.

The *Sentry Series KNP100F Indoor/Outdoor Filter Fans* offer the same convenience, versatility and reliability as the *Advantage Series Filter Fans*, with the added protection of a *NEMA 3R* Rating, making these models an excellent choice for the food service industry, telecommunications, and other outdoor applications.

### options

*Sentry Series Filter Fans* can be supplied with reverse airflow direction. Depending on request and quantity, filter fan parts can be supplied with different colors. The serviceable filters for the *Sentry Series Filter Fans* are stable up to 100°C and 100%rh, and guarantee a continuous high level of protection. With the replaceable filters, dust capturing capacity is high, reducing maintenance.

### features

*Advantage Sentry Series Filter Fans* offer convenience, versatility and reliability. They are available in a variety of sizes, voltages and protection levels. With a *NEMA 3R* Rating, *Advantage Sentry Series Filter Fans* are designed for indoor or outdoor use, and are perfect for dissipating high heat loads economically.

### knp100f



405 CFM\*  
16" H x 14" W x 8" D



**NEMA**  
TYPE 3R  
MAINTAINED

\* Fan airflow without filter and grille.

heaters



Compact high-performance **KSEHT Fan Heaters** prevent formation of condensation, providing an evenly distributed interior air temperature in electrical enclosures, increasing component reliability. These heaters feature brushed metal housings and include an auto fan control switch to prolong motor life. A pilot light indicates "Heat On" condition.



fan heaters with thermostat

ptc heaters



Compact **Heaters** in **PTC** technology maintain minimum operating temperatures in electrical enclosures, helping to prevent failure of electronic components caused by condensation and corrosion. These models feature heating power that adjusts to ambient temperature and convenient push connectors for quick and easy wiring. Compact **PTC Heaters** are DIN rail mountable. **Small PTC Heaters** are also available.

Compact high-performance **Fan Heaters** prevent formation of condensation and provide an evenly distributed interior air temperature in outdoor enclosures and control cabinets - especially under extreme climatic conditions. Foot mounting capability or panel/DIN rail mounting available.

The plastic enclosure provides double insulation which acts as protection against contact. These **Fan Heaters** include an integrated **Thermostat** or **Hygrostat** for temperature or humidity control.

panel-mount high-performance fan heaters



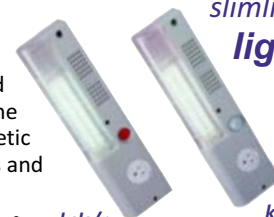
compact fan heaters



Where space is a critical factor, these compact **Fan Heaters** are ideal for maintaining minimum operating temperatures in electrical enclosures, helping to prevent failure of electronic components caused by condensation and corrosion. These models feature built-in overheat protection. Compact **Fan Heaters** are DIN rail mountable.

lights

slimline lights



- > compact design
- > integrated receptacle
- > energy-saving lamp
- > on/off switch or motion sensor



ksls/r light with on/off switch  
ksml/r light with motion sensor

The **Slimline Light** was designed to fit in tight spaces in enclosures. It features an integrated receptacle, so that electrical devices (i.e. power tools) can be plugged in when needed. The standard light can be screw-mounted in a variety of positions, or fitted with an optional magnetic mount. The motion sensor was designed so that it can be used in enclosures with glass doors and not be activated by movement outside the enclosure.

light-emitting diode

enclosure lights



light w/ screw mount ksleds



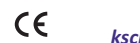
These **LED Enclosure Lights** are suitable for all types of panels and enclosures, especially where space is at a premium. The power output allows up to 10 lights to be connected to each other in a daisy chain, with both the input and output plugs snap-locking into place. Note: Connectors and cables for electrical connection are not included in the delivery of KSLED Series LED Lights. These parts must be ordered separately.

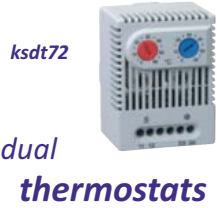
compact enclosure lights

The **KSCL Compact Enclosure Light** was designed for use in industrial enclosures and control cabinets. A strong magnet allows simple, quick installation and flexibility for various mounting positions. The service life of the compact fluorescent lamp is 5000 hours.



- > magnet or din rail mounting
- > energy-saving lamp
- > integrated receptacle
- > on/off switch





### thermostats

The **KSDT Dual Thermostat** houses two separate thermostats, allowing independent control of heating, cooling or other equipment. Both thermostats offer wide adjustment ranges and are color coded for easy function recognition. These thermostats are available in °F or °C, and are DIN rail mountable.



The **KSSTC "NC" (normally closed) Thermostat** opens at temperature rise, and comes with a red dial. The **KSST "NO" (normally open) Thermostat** closes at temperature rise, and comes with a blue dial. Both models feature compact design with a wide adjustment range, are available in °F or °C, and are DIN rail mountable.



### small thermostats



These **KS7ET 24VDC Electronic Thermostats** are designed to switch the potentially high loads (Amps) of 24VDC operated equipment. With their potential-free change-over contact, a wide variety of products can be switched, i.e. heating/cooling equipment and signal devices. These **KS7ET 24VDC Electronic Thermostats** feature adjustable temperature, and are DIN rail mountable.

### electronic hygrotherms

The **KSHTC Electronic Hygrotherms** sense the ambient temperature and relative air humidity. Depending on which contact combination is chosen, they turn on or off a connected device if either the temperature is below, or the humidity above the set point. The integrated LED in each adjustment knob is lit, indicating the active function. The **KSHTC Electronic Hygrotherms** are DIN rail mountable.



### enclosure receptacles

The handy, convenient **KSDR/RF Enclosure Receptacles** offer quick connections, are available with or without fuse and are DIN rail mountable.



### self-adhesive mounting aids

These **KSDR/FIX Mounting Aids** are specially designed to make mounting of smaller DIN mountable components easier. They can be used whenever the installation of a DIN rail is impractical, or when there is not enough space left in the enclosure. Because of their industrial grade self-adhesive they can be installed more easily and quickly than a conventional DIN rail, without the effort of hole drilling or screw mounting. These **KSDR/FIX Mounting Aids** can hold components up to 1.1 lbs in weight. Some of the many applications include the mounting of timing relays, series terminals, thermostats, cable channels and small heaters.

## *applications*

As the industry leader in electrical enclosure cooling **KOOLTRONIC** offers products covering a wide range of applications:

- ✓ **Telecommunications**
- ✓ **Robotics**
- ✓ **Medical**
- ✓ **Hazardous Location**
- ✓ **Chemical**
- ✓ **Elevator**
- ✓ **Kiosk**
- ✓ **Food & Beverage**
- ✓ **Transportation**
- ✓ **Security**
- ✓ **Steel & Paper Mills**
- ✓ **Data (19" racks)**
- ✓ **Oil & Gas**
- ✓ **Pharmaceutical**
- ✓ **Wastewater & Water Treatment**
- ✓ **Industrial**
- ✓ **Alternative Power Generation**
- ✓ **Factory Automation**
- ✓ **Golf Course Irrigation**



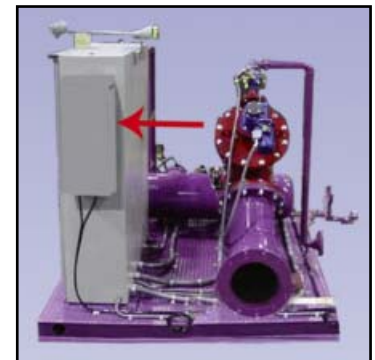
**Hazardous Location**



**Transit**



**Custom Medical Unit**



**Golf Course Irrigation**



**Industrial**



**Wastewater Treatment**



**Food & Beverage**

### *experience is key*

Providing industry with innovative cooling solutions has always been a major commitment at KOOLTRONIC. For over sixty years we have worked closely with clients to pinpoint the problems inherent in maintaining the consistent temperatures necessary to keep sensitive electronics operating safely. In the process, KOOLTRONIC has developed insight into the unique cooling needs of a variety of industries. Environments housing electronics can vary greatly - from indoor central sites, to remote sites open to weather, to diverse manufacturing sites subjected to corrosive elements. For these, and many other environments presenting unique cooling problems, KOOLTRONIC has designed effective cooling solutions.

[kooltronic.com](http://kooltronic.com)

Air conditioners typically carry an agency marking such as UL (Underwriters Laboratories), which designates the environmental hazard from which the contents are being protected. This marking should be matched to the enclosure to be cooled. Typical examples include NEMA 12 (indoor use, protection from dust and dripping liquids), NEMA 3R (indoor or outdoor use and rainproof), NEMA 4 (indoor or outdoor use, protection from wash-down) and NEMA 4X (indoor or outdoor use, protection from corrosive environments).

<b>Environments:</b>	<b>NEMA 1</b>	<b>NEMA 12</b>	<b>NEMA 3R</b>	<b>NEMA 4</b>	<b>NEMA 4X</b>
<b>Indoor use only</b>	✓	✓			
<b>Indoor and outdoor use</b>			✓	✓	✓
<b>Falling liquids and light splashing</b>		✓	✓	✓	✓
<b>Non-hazardous dust, lint, fibers</b>		✓		✓	✓
<b>Washdowns and splashing water</b>				✓	✓
<b>Oil and coolant seepage</b>		✓			
<b>Corrosive agents</b>					✓
<b>Hazardous Location (Class I, Division 1 &amp; 2)</b>					✓

Kooltronic offers cooling solutions for situations that fall under these NEMA ratings. We can develop a unique design to meet your particular requirements. Consult with Kooltronic’s design and engineering staff to discuss your heat dissipation problems.

*kooltronic website*

The answers to your cooling questions are just a click away!

Visit the **Kooltronic website** to find:

- ✓ New products
- ✓ Product information
- ✓ Company information
- ✓ 3D solid models
- ✓ Sizing tools, product selection and design guides
- ✓ Data sheets, operator’s manuals, wiring diagrams & more
- ✓ The Kooltronic Regional Sales Manager for your area



Scan with your smart phone to visit [kooltronic.com](http://kooltronic.com)!

The Kooltronic website is the place to go when you need help selecting a cooling product to fit your requirements. Our interactive sizing tools will help you to find a Kooltronic unit to fit your application. If you need expanded product information, our website offers photos, drawings, performance data and product availability. With our mounting plans and the convenience of our downloadable documents you will find all of the information you need to make the correct choice - right at your fingertips!

Direct your inquiries to the source...Visit the Kooltronic website today!

*Join our mailing list!*



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