



we love to support you

Products, Solutions and Service

aus Freude am Support

Produkte, Lösungen und Beratung



Temperature Management



Cooling Units Air to Air



Air to Air 50 W

- 30 W cooling capacity
- 163x104x144mm (LxBxH)
- 1,9 kg



Air to Air 70 W

- 36 W cooling capacity
- 163x104x144mm (LxBxH)
- 1,9 kg



Air to Air 75 W

- 30 W cooling capacity
- 130x109x163mm (LxBxH)
- 1,5 kg



Air to Air 80W

- 36 W cooling capacity
- 195x110x163mm (LxBxH)
- 2,1 kg



Air to Air 100W

- 71 W cooling capacity
- 203x167x160mm (LxBxH)
- 4,1 kg



Air to Air 110W

- 81 W cooling capacity
- 316x203x161mm (LxBxH)
- 7,2 kg



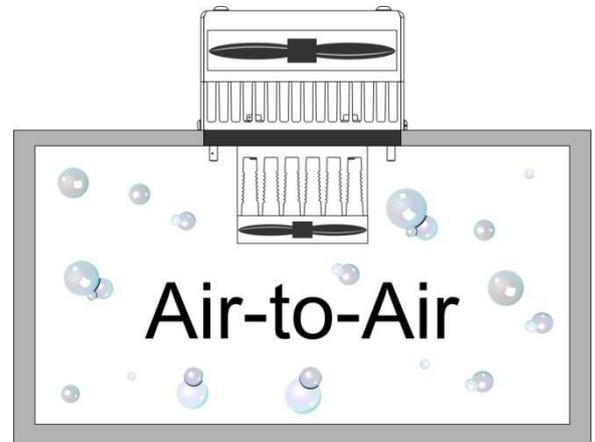
Air to Air 215W

- 134 W cooling capacity
- 316x203x161mm (LxBxH)
- 7,3 kg



Air to Air 380W

- 176 W cooling capacity
- 253x205x215mm (LxBxH)
- 6,8 kg



Advantages / Characteristics

- Cooling and heating by Peltier technology
- Cooling performance from 30W to 176W
- 12, 24, 48 V DC-designs
- Inner and outer air circuit separated
- Easy handling
- Precise regulation of temperature
- Operation independent of the position
- No moving parts (except for fan impeller)
- No liquids, no cooling fluids
- Environmentally friendly solutions
- Very low noise level
- Compact design und low weight
- Application at high temperatures (>60°C)

Application examples

- Air conditioning of control cabinets & consoles
- Transportation of biological materials und liquids
- Container for cosmetic und pharmaceutical products
- Thermoelectric air conditioners
- Thermal calibrators und thermostats
- Portable cooling boxes in variable sizes
- LED for advertising boards
- Surveillance cameras
- Climatic chambers

Cooling Units Surface to Air



Surface to Air 50 W

- 35 W cooling capacity
- 163x104x84mm (LxBxH)
- 1,4 kg



Surface to Air 70 W

- 41 W cooling capacity
- 163x104x84mm (LxBxH)
- 1,4 kg



Surface to Air 75 W

- 41 W cooling capacity
- 195x110x90mm (LxBxH)
- 1,7 kg



Surface to Air 100 W

- 80 W cooling capacity
- 203x167x95mm (LxBxH)
- 1,4 kg



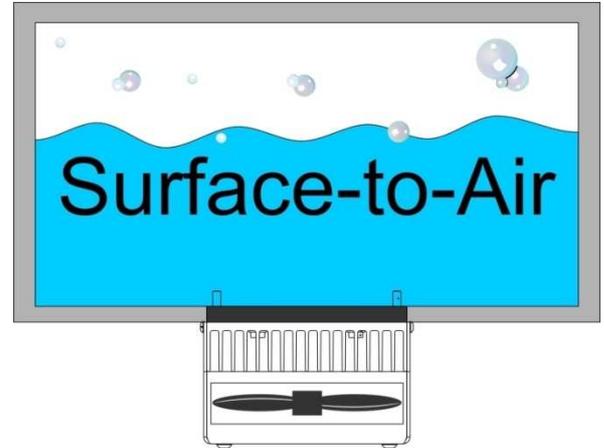
Surface to Air 215 W

- 158 W cooling capacity
- 316x203x91mm (LxBxH)
- 5,6 kg



Surface to Air 380 W

- 201 W cooling capacity
- 253x205x134mm (LxBxH)
- 5,3 kg



Advantages / Characteristics

- Cooling and heating by Peltier technology
- Cooling performance 35W to 200W
- 12, 24, 48 V DC-designs
- Inner and outer air circuit separated
- Easy handling
- Precise regulation of temperature
- Operation independent of the position
- No moving parts (except for fan impeller)
- No liquids, no cooling liquids
- Environmentally friendly solution
- Very low noise level
- Compact design and low weight

Application examples

- Calibration station for IR-applications
- Heating- / cooling plates for electronic testing
- Tempering of liquids and gases
- Cooling catering

Peltier Modules



Standard types

- 11,5x11,5mm to 40x40mm
- Q_{cmax}: 3,8W to 95,0W
- ± 25µm height tolerance



High performance types

- 39,7x39,7mm to 62x62mm
- Q_{cmax}: 108W to 345W
- V_{max}: 4,3V to 53,8V



Cascade types

- 10x10mm to 62x62mm
- Q_{cmax}: 11W to 74W
- ΔT up to 112K
- 2- and 3- stages



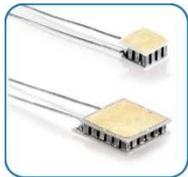
Cycler modules

- 30x30mm to 40x40mm
- Q_{cmax}: 5,5W to 72W
- For frequent switchover cycles
- Life expectation >500.000 cycles typical



with drill hole

- 8,65x8,65mm to 39,7x39,7mm
- Q_{cmax}: 2W to 56W
- With central or multiple holes



Miniature types

- 1,2x1,5mm to 10x20mm
- Q_{cmax}: 0,07W to 10W
- Also with metallization

Advantages / Characteristics

- Cooling and heating
- Cooling performance: 0,07W to 345W
- 1,2x1,5mm to 62x62mm surface of heating / cooling
- Operating / ambient temperature: -40°C to +170°C, continuous operation temporary up to +200°C
- Life cycle > 200.000 hours
- Versions for temperature cyclic applications
- Cascade versions and customer-specific designs
- RoHS-conform
- Height tolerance from up to ±10µm

Application examples

- Electronics
Cooling of HF-components, laser diodes, power transistors, highly sensitive radio receivers / amplifiers and miscellaneous electrical devices, where efficient and reliable cooling is needed.
- Air conditioning devices for stabilization of temperature of different containers & cases.
- Medical and laboratory technology
- Cooling of solid, liquid and gaseous mediums, laser and medical instruments
- Cosmetic / medical cooling boxes
- Thermal calibration und cooling tables



Peltier temperature controller UETR-MOST-16A

- Heating- and cooling in one device
- Two temperature sensors incl. in delivery
- 16A switching capacity by integrated relays
- Control range: -34,9 to +144,9°C adjustable



Integrated thermostats

- 2 Variants for switching current (12-24VDC or 48VDC)
- DIP-switch in 32 steps adjustable
- Electrical two-point control
- Control range: 0°C to 62°C



Compact and intelligent PID-control

- Operating voltage: 24VDC or 100-230VAC
- Two control outputs for heating and cooling
- Dimensions: 48x48x60mm (LxBxH)



High performance PID-temperature control

- Operating voltage: 24VAC, 50-60Hz; 24VDC
- Fast scan cycle of 60ms
- Dimensions: 48x48x78mm (LxBxH)



Electrical thermostat

- Adjustment range: 0°C to +60°C
- Maximal switching capacity DC 28V, 16A
- Sensor element PTC
- Dimensions: 67x50x46mm (LxBxH)

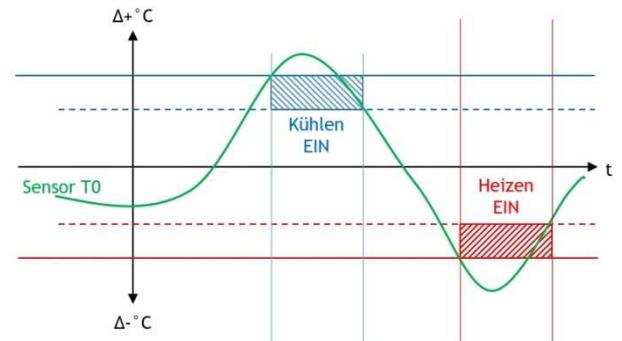


Thermostat with bi-metal

- Break contact for control of heaters
- Adjustment range 0-60°C (switching-temperature difference approx. 7K)
- Switching capacity 10A, AC 205V
- Dimensions: 33x60x35mm (LxBxH)

Two-point control

Our UETR-MOST-16A provides you with a two-point control for both output channels. This enables a separate programming of heating and cooling for the Peltier modules.



Advantages / Characteristics

- Analogue, digital, multi-point temperature controller
- Operating mode of regulation: PID, 2-point, 3-point
- Input: thermocouple, PT100, NTC-10K, tension or current (linear)
- Output: relays, transistor or current (continuous)
- User friendly programming
- Highest stability of temperature via auto-tuning and self-optimization functions

Application examples

- Control of heating or cooling processes in industrial plants
- Temperature controllers
- Serial interface



Heat Sinks



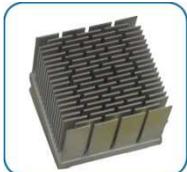
BGA clip heat sinks

- Elliptical, rectangular or circular cooling fins
- Very easy and quick montage
- From 19x19x33mm (LxBxH)



BGA heat sinks / cooling fans

- Rectangular cooling fins
- Very easy and quick montage
- From 27x27x18mm (LxBxH)



CPU heat sinks / cooling fans

- Socket 370, 478, 604, 904 und 1366
- From 50x49x33mm (LxBxH)
- Thermal resistance up to 0,21 K/W



LED heat sinks

- Diameter: 32 - 160mm
- Height: 20 – 70mm



Liquid heat sinks

- Cooling surface: 59,5mm x 89mm
- Range of application: 0...100°C
- Case made of aluminium
- Thermal resistance up to 0,21 K/W

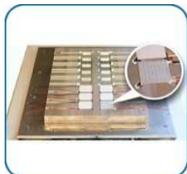
Advantages / Characteristics

- Heat sinks and combinations with cooling fans for:
 - CPU-cooling
 - BGA-cooling
 - LED-cooling
 - direct support for Peltier modules
- All sorts of dimensions and lamella lengths available
- Patented BGA-clip-heat-sinks

Application examples

- Industry-PC solutions
- Thermo-electrical applications
- Embedded-systems
- Medical technology

Special Solutions



Special types: Peltier modules

- Based on a standard type
- Customer-specific modifications to:
 - Cable manufacture
 - Sealing against corrosion
 - Printing with PCM



Peltier-Evaluation - KIT 1

- Active cooling / heating area: 22mm x 22mm
- Connected load 12W
- Dimensions: 27x27x22mm (LxBxH)



Peltier-Evaluation - KIT 2

- Active cooling / heating area: 30mm x 30mm
- Connected load 15W
- Dimensions: 40x40x20mm (LxBxH)



Peltier-Evaluation - KIT 3

- Active cooling / heating area: 40mm x 40mm
- Connected load 50W
- Dimensions 60x60x44mm (LxBxH)



Peltier-Evaluation - KIT 4

- Active cooling / heating area: 40mm x 40mm
- Connected load 120W
- Dimensions: 90x90x83mm (LxBxH)



Evaluation - KIT 3 - with integr. Sensor

- Electively with PT100 or NTC-10K
- Active cooling / heating area: 40mm x 40mm
- Connected load: 50W
- Dimensions: 60x60x54mm (LxBxH)



Evaluation - KIT 4 - with integr. Sensor

- Electively with PT100 or NTC-10K
- Active cooling / heating area: 40mm x 40mm
- Connected load: 120W
- Dimensions 90x90x97mm (LxBxH)

Advantages / Characteristics

- Special layout & set-up to provide individual solutions in area of temperature management
- Composition of different, individual products and parts to form a complete solution
- Customer-specific adaptations on standard products
- Construction and development of customer-specific solutions
- Manufacturing of prototypes, production of small, medium, and high volumes

Application examples

- Tempering of miniature parts and test items
- Cooling- / heating systems in the food industry
- Tempering of vessels and containers
- Special solutions including measurement / control of temperature, Peltier modules, cooling elements and power supply units

Temperature Sensors



Screw-in resistance thermometer

- With connection thread G1/2
- Temperature range: -50 to 400°C
- Spring force: 0,85N



Spring loaded thermocouple

- extreme long life span
- Type T up to 150°C / Type K up to 260°C
- Low thermal mass / heat capacity



Sensor with screw eyes

- Diameter of screw eye: Ø 6mm
- Sensor colour available in red and blue
- Type of sensor: NTC-10K



Surface sensor (protected)

- With self-adhesive mounting cap and borehole Ø 3mm
- Type of sensor: PT100 or NTC-10K



Surface sensor (screw-in)

- With 5mm mounting screw hole within block of stainless steel
- Type of sensor: PT100 or NTC-10K



Plug-in sensor

- Insertion depth: 30mm or 50mm
- Diameter Ø: 3mm or 5mm
- Type of sensor: PT100 or NTC-10K



Air temperature sensor

- Protective sleeve made of stainless steel
- With very low mass (for quick response)
- Type of sensor: PT100 or NTC-10K

Advantages / Characteristics

- For use in outdoor areas and in humidors, IP67 is possible
- Case made of stainless steel
- All common types of thermocouples and connection head shapes

Application examples

- Motor / gas technology
- Measurement of vessels, tanks, silos
- Measurement technique for liquids and solids
- Food technology
- Outdoor temperature measurement



Infrared Sensors / Cameras



IR-temperature-sensor IR-CSL 15

- Temperature range from -40 to 1030°C
- Setting time takes 25sec
- Power Supply 5-30V DC



IR-temperature-sensor IR-CSM

- Miniature probe head with electronics integrated in the cable
- Available for measurement of either metals or non-metals
- Diverse temperature ranges for measurement available



IR-temperature-sensor IR-CHT - for non-metals

- 8 - 14 μm measuring wavelength
- Temperature range: -50 to +1030°C
- Simple measurement of moving and poorly accessible parts



IR-temperature-sensor IR-CHT - for metals, glass und foils

- 1,6 - 7 μm measuring wavelength
- Temperature range: +50 to +2500°C
- Simple measurement of moving and poorly accessible parts



Thermal imaging camera IR 160

- Thermal sensitivity from 80mK
- Thermal image in real time with up to 120Hz
- Detector with 160x120 Pixel
- Compact design: 45x45x62mm (LxBxH)



Thermal imaging camera IR 200

- BI-SPECTRAL Technology
- Thermal image in real time with up to 128Hz
- Detector with 160x120 Pixel
- Compact design: 45x45x62mm (LxBxH)



Thermal imaging camera IR 400

- Thermal sensitivity with 80mK
- Thermal image in real time with up to 80Hz
- Detector with 382x288 Pixel
- Compact design: 46x56x90mm (LxBxH)



Thermal imaging camera IR 450

- Thermal sensitivity with 40mK
- Thermal image in real time with up to 80Hz
- Detector with 382x288 Pixel
- Compact design: 45x56x90mm (LxBxH)

Advantages / Characteristics

- Measurement of moving parts
- Measurement of poorly accessible parts
- Measurement of high object temperatures
- Very rapid measurement
- Diverse optical lenses available to adjust size of measured surface
- Extensive software package

Application examples

- Measurement of roller temperature
- Measurement when sealing and soldering
- Measurement during drying processes
- Analysis of hardening processes
- Control of cooling processes of glass bottles
- Surveillance of temperature of bakes goods
- Assessment of foil temperatures
- Assessment of regulation of temperature during plastics production
- Determination of induction heat
- In-line measurement of plastic-bottle temperature during manufacturing process

Heating Foils / Flat Radiators



Polyester heating foil

- -50°C to +100°C working temperature
- Up to 1W/cm² heating performance
- Dimensions up to 500x2000mm
- Favourable



Silicon heating foil

- -50°C to +170°C working temperature
- Up to 2W/cm² heating performance
- Dimensions up to 550x2000mm
- Chemically resistant



Kapton heating foil

- -200°C to +200°C working temperature
- Up to 4W/cm² heating performance
- Dimensions up to 550x600mm
- Vacuum resistance



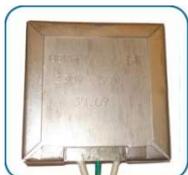
Micanite flat heating foil

- -150°C to +400°C working temperature
- Up to 5W/cm² heating performance
- Dimension up to 1000x1000mm



Plate heater UEPH-230-300W

- Power supply: 230VAC
- Heating performance: 300W
- Dimensions 50x50x14mm (LxBxH)
- Thermocouple type K (NiCr-Ni)



Flat radiator

- Design: micanite in stainless steel sheet
- Current: 240 VAC
- Available with different heating performances
- Available in diverse versions



Heater for switching cabinet UEHK

- Heating performance: 50W to 500W
- Thermostat can be included optionally
- PTC-heater
- Montage: screw connection & DIN-rail

Advantages / Characteristics

- Exclusively customised designs
- Targeted surface heating
- Self-adhesive designs
- Long life span & high durability
- Flexible or rigid
- Temperature range from -200°C to +400°C
- Diverse possibilities of application
- Different carrier materials

Application examples

- Medical technology:
Kapton heating foils for tempering of blood samples or medical instruments
- Analysis technology:
Silicon heating foils for heating of carrier materials and matrices inside analytical devices
- Machine construction & mechanical engineering:
Micanite flat heater or silicon heating foils for packaging machines
- Aerospace technology:
Kapton heating foils for de-icing (for example of propeller)
- Optical industry:
Polyester heating foils for heating of sight glass / protective glass
- Telecommunication:
Polyester heating foils for heating LCD-displays
- Catering:
Kapton heating foils for heating plates and coffee machines
- Sensor technology:
Heating of sensors, probes, & related parts



Accessories



Liquid cooler without compressor

- Compact, space-saving structure
- Cooling performance up to approx. 800W
- Operating range of media temperature up to max. 60°C



Liquid cooler with compressor

- Pump capacity max. 4 l/min at 2,2bar
- Cooling capacity at 20°C water outlet temperature: 600W
- Tank capacity: 5 litres



Robust air cooler with compressor

- Generated cool air: 20°C - 30°C
- Power supply 240V 50Hz/60Hz
- Dimensions: 500x290x390mm (LxBxH)



Power supply units

- Performance: 15W to 960W
- Voltage: 5V to 48V DC
- Very high efficiency up to 93%
- Thermal switch: 110°C



Electrical Reverser Unit

- Function heating/cooling for Peltier modules
- Precise PID-control possible
- No wear parts and burned contacts
- Available with or without heat sink
- Range of voltage load: 8,5V to 28V DC



Solid state relays

- DC/DC, DC/AC, AC/AC versions available
- AC-switching capacity up to 205A / 660VAC single-phase or 90A / 480VAC three-phase
- DC-switching capacity up to 40A / 200VDC

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