THERMAL MANAGEMENT SOLUTIONS

NORTH AMERICAN CATALOG

CHILLERS | COOLING UNITS | HEAT EXCHANGERS | HEATERS & THERMOSTATS | FILTERFANS 4.0™

REQUEST A FREE QUOTE

https://hubs.ly/Q01f70ml0

PROTECTING PEOPLE, MACHINES AND THE ENVIRONMENT

Pfannenberg
ELECTRO-TECHNOLOGY FOR INDUSTRY

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Thermal Management

Learn more about Pfannenberg and what we do

50°F LOW AMBIENT		100°F HIGH AMBIENT	150°F +
Cool Ambient, Clean or Slightly Dirty Conditions	**Cool Ambient, Dirty Conditions**	**High Ambient & Clean or Dirty Conditions**	**High Ambient and/or Very Harsh, Dirty Conditions**
Filterfan 4.0™ & Exhaust Filters	PKS Air / Air Heat Exchangers	DTS Cooling Units	PWS Air/Water Heat Exchangers

Protecting Critical Electronics

Proper thermal management for electronic enclosures is necessary to ensure the longevity of the critical electronics that are the backbone of your production process or system. Electronics are typically most efficient in low humidity with a temperature around 95°, but generate a great deal of heat and are affected by weather, solar radiation, or external temperature sources.

Proper Climate Control:
- Prevents critical temperature fluctuations
- Avoids overheating
- Protects against condensate
- Minimizes the chance of failure or costly downtime

3 Basic Cooling Methods for Enclosure Cooling:
- Natural Convection
- Forced Convection
- Closed-loop Cooling

Pfannenberg Sizing Software

Online step-by-step selection tool

How to choose the correct products for your application? Get more information at the QR code or utilize our free software:

https://hubs.ly/Q01gNRQL0

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Complete Thermal Management Catalog

← Download here

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FILTERFANS 4.0™

Best suited for clean, non-hazardous environments with an acceptable temperature outside the enclosure.

LEARN MORE

Features & Benefits

Highest Quality Fans
German manufactured fans that exceed industry standards for quality, performance and service life.

Easy Installation
Easy install and maintenance with patented tool-less Fastening System.

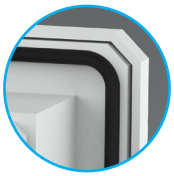
Type 12
Type 12 Protection ensures that the closed frame design prevents unfiltered air from penetrating the cabinet.

Globally Compatible
ERP compliant to meet European efficiency directives. Units also comply with additional national and international standards, e.g. TÜV, NEMA, UL, CSA and EAC.

Available Colors:

RAL 7035 Grey

RAL 9011 Black

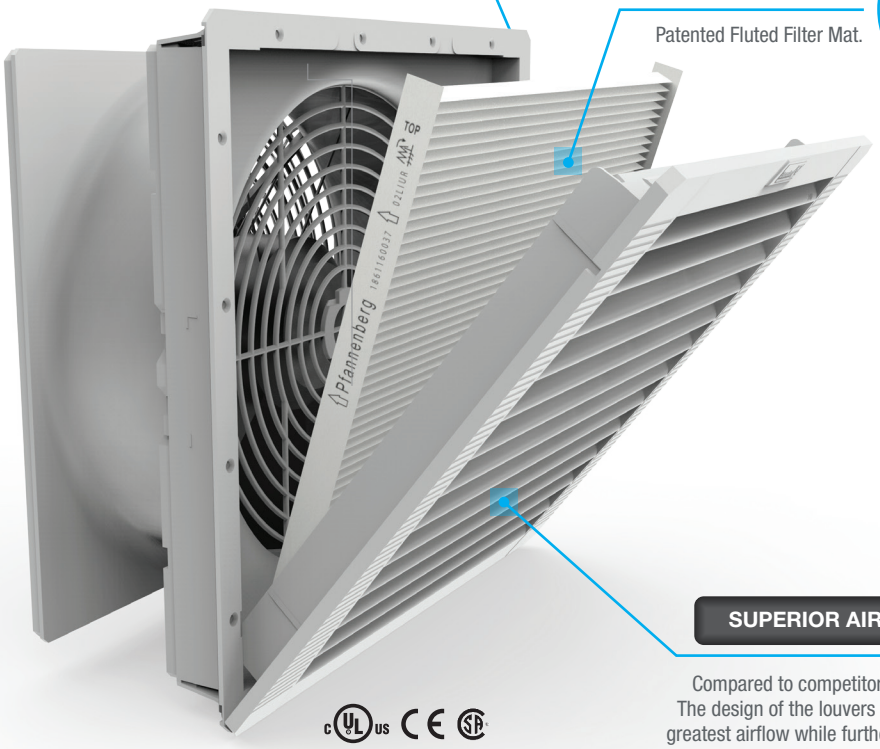


SUPERB SEAL

Poured foam gasket provides tighter, secure seal.

LASTS 300%LONGER

Patented Fluted Filter Mat.

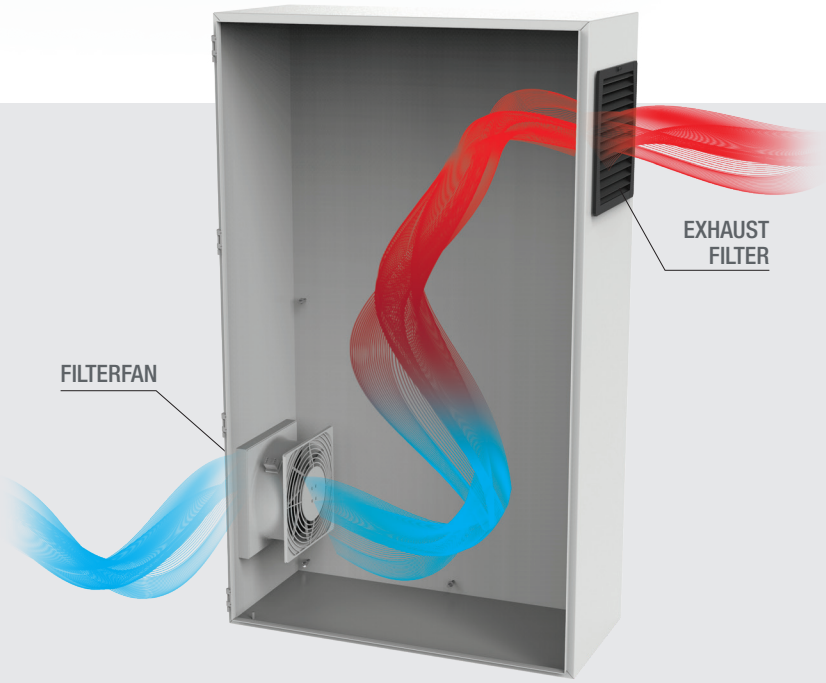


SUPERIOR AIRFLOW

Compared to competitor's filter fans. The design of the louvers supports the greatest airflow while further protecting against airborne dust and dirt.

The Technology of Cooling with Filterfans

- Always use the Filterfans to propel the cooler ambient air into the enclosure.
- Slight positive pressure builds up inside the cabinet so that only air filtered by the Filterfans flows into the enclosure.
- The air propelled into the cabinet displaces the warm air which exits through the exhaust filter.
- When installing a combination of Filterfans and exhaust filters, fit the Filterfan in the lower third of the cabinet and the exhaust filter(s) near the top of the cabinet.



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FILTERFANS 4.0™ QUICK SELECTION CHART

MODEL	AIR FLOW RATE[1] CFM[2] (Type 12)	AVAILABLE VOLTAGES	CUT-OUT DIMENSIONS H x W,[3] inches (mm)
PF Series Filterfans 4.0™			
PF 11000	17	115 V / 230 V AC / 24 V DC	3.62 x 3.62 (92 x 92)
PF 22000*	38	115 V / 230 V AC / 24 V DC	4.92 x 4.92 (125 x 125)
PF 32000*	65	115 V / 230 V AC / 24 V DC	6.97 x 6.97 (177 x 177)
PF 43000*	169	115 V / 230 V AC / 24 V DC	8.78 x 8.78 (223 x 223)
PF 65000*	297	115 V / 230 V AC	11.49 x 11.49 (292 x 292)
PF 66000*	462	115 V / 230 V AC / 400 V/460 V 3 Ø	11.49 x 11.49 (292 x 292)
PF 67000*	560	115 V / 230 V AC / 400 V/460 V 3 Ø	11.49 x 11.49 (292 x 292)
PF Slim Line Filterfans 4.0™			
PF 33000 SL	152	115 V / 230 V AC	6.97 x 6.97 (177 x 177)
PF 65000 SL	325	115 V / 230 V AC	11.49 x 11.49 (292 x 292)
PF 67000 SL	427	115 V / 230 V AC / 400 V/460 V 3 Ø	11.49 x 11.49 (292 x 292)
PTF 1200 Top-Mounted Filterfans			
PTF 1200	589	115 V / 230 V AC	11.81 x 11.81 (300 x 300)

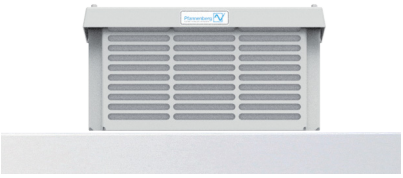
***Also available in 3R**
[1]Free Blowing
[2]Unimpeded Airflow

Slim Line Filterfans

All the original PF Filterfans 4.0 features adapted to small sized cabinets with one inch lower installation depth.

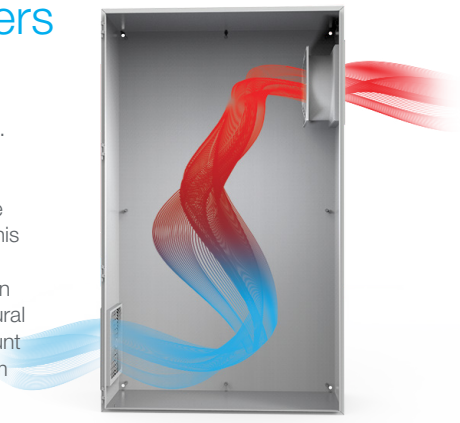
Top-Mounted Filterfans

High airflow fan with a space-saving design to efficiently cool densely packed cabinets.



Exhaust Filters

Exhaust Filters are used with Filterfans to remove the heat from an enclosure. If the ambient temperature is always lower than the required temperature in the electrical enclosure, then this method is an economical solution. Exhaust Filters can also be used alone for natural convection when the amount of heat being removed from your enclosure is minimal.



FILTERFAN EXHAUST FILTERS 4.0™ QUICK SELECTION CHART

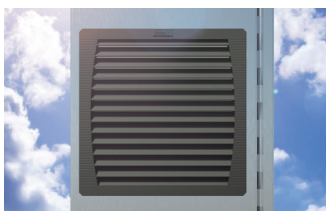
MODEL	CUT-OUT DIMENSIONS H x W,[3] inches (mm)
PFA Series Exhaust Filters	
PFA 10000	3.62 x 3.62 (92 x 92)
PFA 20000*	4.92 x 4.92 (125 x 125)
PFA 30000*	6.97 x 6.97 (177 x 177)
PFA 40000*	8.78 x 8.78 (223 x 223)
PFA 60000*	11.49 x 11.49 (292 x 292)

***Also available in 3R**

Filterfan Options

3R Outdoor Filterfans

Outdoor Rated Type 3R protection against the harmful effects of weather.

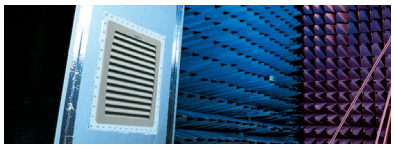


Datawind IT Filterfans

Externally mounted to avoid sacrificing critical internal enclosure space.

EMC Filterfans

Protection against electromagnetic interference.



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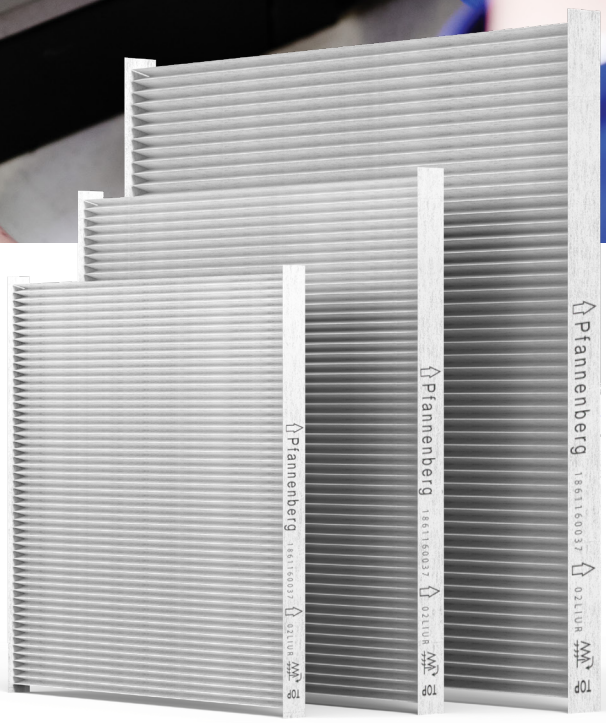
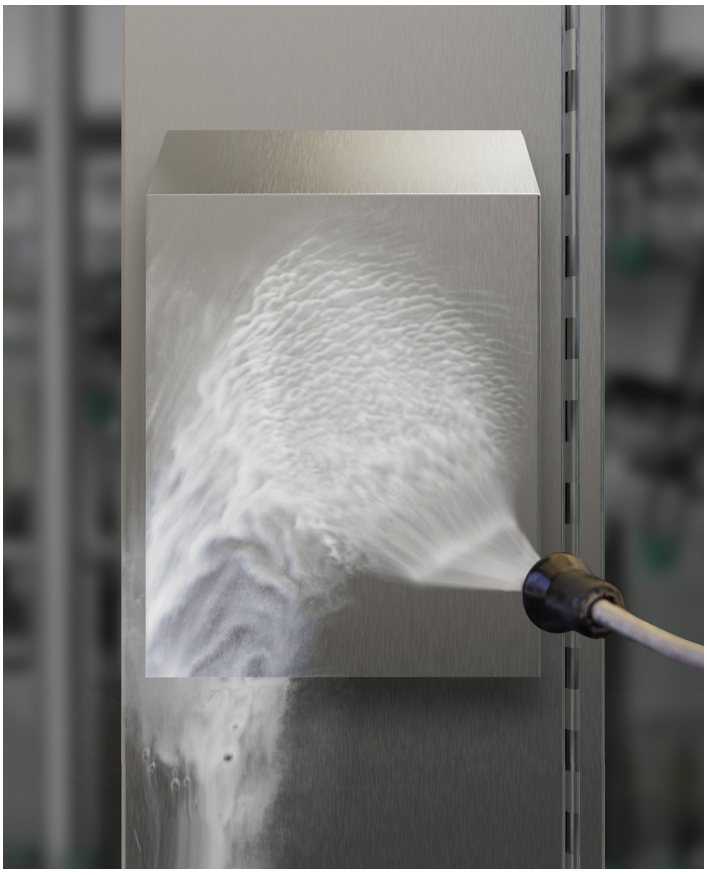


Pfannenberg Fluted Filtermat

Filter Media

- Fluted design provides broad efficiency and economic benefits
- Fluted design lasts 300% longer than conventional fiber mats
- Unrivaled air flow with larger surface area
- Increased resistance to moisture and water jets
- Rated G4 filter class for coarse dust filters



Accessories

Filterfan Rainhoods

- **3R/4/4X/IPx6 Washdown Rainhoods**
- Easy installation & maintenance
- Rugged steel construction
- Maximized airflow with superior overspray protection
- Robust sealing against enclosure
- FDA compatible white gasket design available
- Compatible with existing Pfanennberg Filterfans & Exhausts

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COOLING UNITS

Best suited for clean or dirty environments where the ambient temperature is greater than the target internal temperature of enclosure.

LEARN MORE

DTS Series

Features & Benefits

Refrigerant Flow Regulated
Based on thermal demand for efficient performance.

ERP Efficiency Certified
Pfannenberg proudly utilizes components which adhere to ERP (European Energy Related Products Directive) efficiency rating to save energy and reduce operating costs.

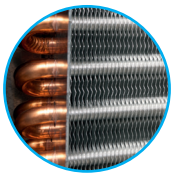
Works at High Temperatures
Performs in environments with a maximum temperature outside the enclosure of 131° F.

Thermal Overload Protection
Unit shuts down in the event of excessive tempertures increasing operating life.

Utilizes HFC-Free Refrigerant
Minimizes negative impact on environment.

CLOSED LOOP DESIGN
Isolates external air from internal conditioned air.

MAINTENANCE FREE-FILTERLESS DESIGN
Less susceptible to clogging from dust buildup.



HERMETICALLY SEALED COMPRESSOR
Recharging never needed under normal operations.

ACTIVE CONDENSATE MANAGEMENT
Eliminate condensation, a natural by-product of refrigeration.

Available Colors:

RAL 7035 Grey | ANSI 61 Grey | Stainless Steel

The Technology of Cooling with Closed Loop Cooling Units

Pfannenberg cooling units operate on the principle of the Carnot cycle.
This means that the cooling unit functions as a heat pump that "pumps" the thermal energy transferred from the electronic cabinet (heat dissipated from the components) up to a higher level of temperature (the ambient temperature can reach levels as high as + 55 °C). The air inside the enclosure is cooled down by the evaporator and at the same time dehumidified.

How do I know if a cooling unit is the right product for my application?

- If the ambient temperature is greater than the target internal temperature of the enclosure, active cooling is required.
- If a NEMA Type 12/3R/4/4x rating is required - closed loop systems can maintain the NEMA Type rating of the cabinet.

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Side Mount Cooling Units

SIDE MOUNT COOLING UNITS QUICK SELECTION CHART

MODEL	COOLING CAPACITY Btu/h	AVAILABLE VOLTAGES	DIMENSIONS H x W x D, Inches (mm)
DTS Series Indoor Side Mount Type 12 Cooling Units*			
DTS 3021	900 - 1300	115 V / 230 V	15.5 x 7 x 7.53 (393 x 177 x 191)
DTS 30X1	2000 - 3000	115 V / 230 V / 460 V	20.15 x 10 x 10.8 (512 x 254 x 274)
DTS 31X1	3000 - 4000	115 V / 230 V / 400/460 V	29.46 x 15.55 x 9.3 (748 x 395 x 237)
DTS 31X1 SL	3000 - 5000	115 V / 230 V / 400/460 V	36 x 12 x 12 (914 x 305 x 304)
DTS 31X5	5000 - 7000	115 V / 230 V / 400/460 V	36 x 12 x 12 (914 x 305 x 304)
DTS 32X1	7000 - 8500	115 V / 230 V / 400/460 V	47.60 x 15.6 x 10.6 (1209 x 395 x 269)
DTS 32X5	9000 - 12000	115 V / 230 V / 400/460 V	53 x 16 x 11.9 (1347 x 406 x 301)
DTS 34X1C	15000 - 20000	230 V / 400/460 V	57.17 x 15.75 x 15.75 (1452 x 400 x 400)
DTS 36X1C	20000 - 24000	230 V / 400/460 V	57.17 x 15.75 x 15.75 (1452 x 400 x 400)

***Also available in Outdoor (Type 3R/4) and Washdown (Type 4/4x).**

DTS Series

LEARN MORE

Integrated & Top Mount Cooling Units

DTT & DTI Series

- The most energy efficient solution with annual savings of over 11%
- Service friendly design reduces routine cost
- Controlled energy efficiency leads to extended fan life

COOLING UNITS QUICK SELECTION CHART

MODEL	COOLING CAPACITY Btu/h	AVAILABLE VOLTAGES	DIMENSIONS H x W x D, Inches (mm)
DTI Series Integrated/Recessed (European)			
DTI 6201 C	3000-4000	230 V / 400/460 V	37.87 x 16.14 x 9.57 (962 x 410 x 243)
DTI 6301 C	5000-6000	230 V / 400/460 V	37.87 x 16.14 x 9.57 (962 x 410 x 243)
DTI 6201 Green Series	3000 - 4000	230 V / 400/460 V	60.47 x 19.09 x 8.58 (1537 x 485 x 218)
DTI 6301 Green Series	5000 - 6000	230 V / 400/460 V	60.47 x 19.09 x 8.58 (1537 x 485 x 218)
DTI 6401 Green Series	7000 - 8000	400/460 V	60.47 x 19.09 x 10.94 (1537 x 485 x 278)
DTI 6501 Green Series	9000 - 11000	400/460 V	60.47 x 19.09 x 10.94 (1537 x 485 x 278)
DTI 6801 Green Series	13000 - 16000	400/460 V	60.59 x 19.09 x 14.64 (1537 x 485 x 372)
DTT Series Top Mount Type 12 Cooling Units			
DTT 6101	1200 - 2000	115 V / 230 V	17.76 x 23.15 x 15.47 (451 x 588 x 393)
DTT 6201	2500 - 4000	115 V / 230 V / 400/460 V	17.76 x 23.15 x 15.47 (451 x 588 x 393)
DTT 6301	4000 - 5500	115 V / 230 V / 400/460 V	17.13 x 23.43 x 19.49 (435 x 595 x 495)
DTT 6401	5500 - 7000	115 V / 230 V / 400/460 V	17.13 x 23.43 x 19.49 (435 x 595 x 495)
DTT 6601	7000 - 10000	400/460 V	19.09 x 31.30 x 22.64 (485 x 795 x 575)
DTT 6801	12000 - 14000	400/460 V	19.09 x 31.30 x 22.64 (485 x 795 x 575)

DTI Compact & Green Series

- Energy efficient
- Recessed mounting

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DTT Series

- Space-saving top mount design option
- 100% Protection against condensate (zero water intrusion into enclosure)

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AIR / AIR HEAT EXCHANGERS

Best suited when the ambient air is too contaminated or humid to enter the cabinet.

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PKS Series

Features & Benefits

CLOSED LOOP DESIGN
Isolates internal air from external air.

ENERGY EFFICIENT
Uses cooler ambient air to cool internal air without active components.

Flexible Mounting
Can be installed vertically or horizontally.

Reduced Maintenance Costs
Only two fans for reduced potential failure.

EASY INSTALL
Only requires one person.

Indoor
Type 12

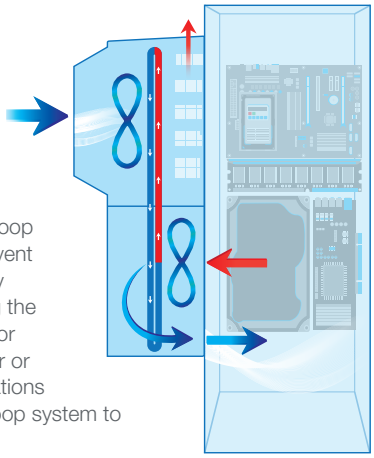
Available Colors:

RAL 7035 Grey

Stainless Steel

The Technology of Cooling with Pfannenberg's Kinetic System™

The PKS 3000 Series Air/Air Heat Exchangers use Pfannenberg's Kinetic System™ to remove heat from an electrical enclosure. This is a perfect solution when concerned with open loop designs that don't prevent corrosive gas, humidity and dust from entering the enclosure. (Designed for cooling indoor, outdoor or remote cooling applications that require a closed loop system to protect electronics.)



Available In:

Outdoor
Type 3R/4

Washdown Nema
Type 4/4X

AIR/AIR HEAT EXCHANGERS QUICK SELECTION CHART

MODEL	SPECIFIC COOLING CAPACITY W/°C	SPECIFIC COOLING CAPACITY W/°F	COOLING CAPACITY @ 20°ΔT Btu/h	AVAILABLE VOLTAGES	DIMENSIONS H x W x D, Inches (mm)
PKS Mini 3042 / Washdown*	22	12	1400	115 VAC	12 x 12 x 7.89 (304 x 304 x 200)
PKS Mini 3092 / Washdown*	45	25	3000	115 VAC	22.75 x 12 x 7.89 (577 x 304 x 200)
PKS 320X / Indoor**	55	31	3700	115 V / 230 V / 400/460 V	35 x 12 x 11 (889 x 304 x 279)
PKS 330X / Indoor**	85	47	5800	115 V / 230 V / 400/460 V	35 x 12 x 11 (889 x 304 x 279)
PKS 336X / Indoor**	100	56	6800	115 V / 230 V / 400/460 V	35 x 12 x 11 (889 x 304 x 279)

*** ONLY available as washdown (Type 4/4X) design.**
**** Also available in Outdoor (Type 3R/4) and Washdown (Type 4/4x).**

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AIR / WATER HEAT EXCHANGERS

Best suited where ambient temperatures are high and/or the air is oily or very dirty.

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PWS Series

Features & Benefits

CLOSED LOOP DESIGN
Isolates internal air from external air.

Washdown Roof Design
Sloped roof sheds water away from enclosure.

CONDENSATE MANAGEMENT
Zero intrusion into the cabinet.

Adjustable Thermostat for Precise Control
Minimizes coolant waste.

Push to Connect Fittings
Quick connection.

Long Airflow Path
Draws hot air from top of enclosure.

Indoor & Outdoor (Washdown) Rated

Available Colors:

RAL 7035 Grey

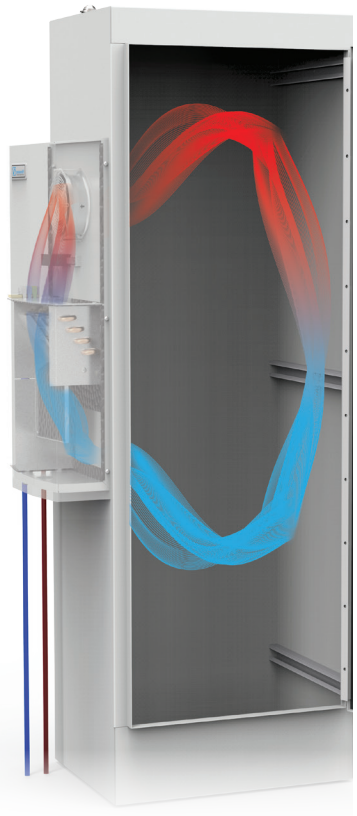
Stainless Steel

The Technology of Cooling with Closed Loop Air to Water Heat Exchangers

Air to Water Heat Exchangers use a supplied water source to remove the heat from the electrical cabinet. The heat from the enclosure is transferred to fluid and the heated fluid is then piped away adding no heat to the ambient environment. Because there is no heat transfer to the ambient environment, there is no need to de-rate the unit's performance in high ambient conditions.

Is an Air to Water Heat Exchanger Right for my Application?

- If there is a chilled water supply readily available at the enclosure.
- If the environment has extreme conditions like extremely high ambients, extremely dirty or caustic, that make other systems not applicable.



AIR/WATER HEAT EXCHANGERS QUICK SELECTION CHART*

MODEL	COOLING CAPACITY Btu/h	AVAILABLE VOLTAGES	DIMENSIONS H x W x D, Inches (mm)
PWS 3062	2218 / 650	115 / 230 VAC	24.14 x 10.13 x 5.62 (613 x 257 x 143)
PWS 3082	2900 / 900	115 / 230 VAC	24.14 x 10.13 x 5.62 (613 x 257 x 143)
PWS 3102	3753 / 1100	115 / 230 VAC	32.05 x 15.80 x 6.28 (814 x 401 x 159)
PWS 3152	5800 / 1700	115 / 230 VAC	36.65 x 11.78 x 8.11 (930 x 299 x 205)
PWS 3202	7165 / 2100	115 / 230 VAC	51.89 x 15.76 x 9.07 (1318 x 400 x 230)
PWS 3302	12283 / 3600	115 / 230 VAC	51.89 x 15.76 x 9.07 (1318 x 400 x 230)
PWS 3502	21496 / 6300	115 / 230 VAC	57.09 x 15.76 x 8.60 (1450 x 400 x 218)
PWS 31002	34121 / 10000	230 / 460 VAC	65.52 x 19.74 x 12.10 (1664 x 501 x 307)
PWS 7102	3242 / 950	115 / 230 VAC	19.98 x 7.87 x 5.91 (507 x 199 x 150)
PWS 7332	10748 / 3150	115 / 230 VAC	37.40 x 15.75 x 7.48 (949 x 400 x 189)

*** Available in: RAL 7035 grey (in-door/outdoor rated - Type 12/3R/4) and stainless steel (indoor/outdoor rated - Type 12/3R/4/4x)**

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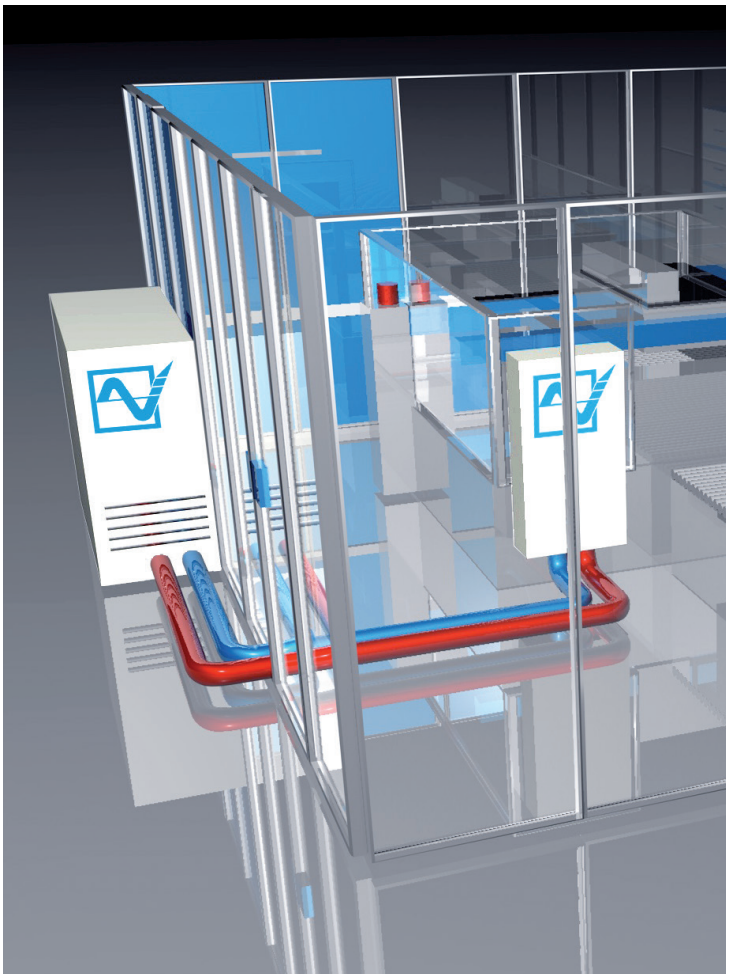
Liquid-Cooling For When a Water Source is Not Available

Air/Water Heat Exchangers & Chillers

Combining Pfannenberg Chillers and PWS Air/Water heat exchangers is the ideal solution for recirculating water cooling systems for control enclosures when a liquid cooling source is not available on site. Dedicated to harsh environments, this solution is the perfect match to save energy, reduce maintenance and prevent downtime.



Pfannenberg Packaged Chillers

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ACCESSORIES

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Premium Quick Filter

The PQF is a new way to filter out particulates and oily mist from an air inlet on your critical equipment. The magnetic strips allows easy, toolless installation with no interruption to your production time. It is installed on the outside of your equipment making it easy to see when the filter is clogged. Changing the filter is as easy as the installation. It takes less than 5 seconds and requires no training or shutdown procedure. Each PQF roll has 60 tearable, 200mm (8inch) sheets providing enough filter replacement for up to one year. It comes in three different lengths: 200mm (8inch), 300mm (12inch) and 400mm (16inch) and is suitable for a variety of applications and air inlet sizes.

PQF PREMIUM QUICK FILTERS

PN	DESCRIPTION	UNITS
18881500018	PQF 200	Any Air Inlet*
18881500019	PQF 300	Any Air Inlet*
18881500020	PQF 400	Any Air Inlet*

* The Premium Quick Filter (PQF) uses magnets to attach and can be used on any magnetic surface. For prefiltering PQF does not provide IP or NEMA Type Rating.

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Monitoring Temperature, Heating and Controlling Condensate

Pfannenberg's Heaters, Thermostats and Hygrostats detect and keep ambient conditions above dew point to avoid the harmful effects of condensation on your electronics. They can be used as a standalone product or in partnership with our Filterfan® and Cooling Unit product lines.

LEARN MORE

Hygrostats / FLZ Thermostats / PFH Fan Heaters with Thermostat / FLH Heaters

FLH Heaters

This type of heating is ideal for use in larger electrical enclosures. They have an integrated fan that assists the natural convection and provides fast and even distribution of the heat in the electrical enclosure. The fan heaters are used in combination with a thermostat or hygrostat, for the avoidance of excessively low temperatures or excessively high humidity in the electrical enclosure and also help to avoid the formation of corrosion.

FLZ Thermostats

Thermostats are used as temperature controllers and, therefore, for the control of Filterfans® or electrical enclosure heaters. They are available with N.C. (normally closed) / N.O. (normally open) and changeover contacts. In combination with control cabinet heaters you can ensure, besides temperature control, that the control cabinet is 'artificially' dehumidified, in particular in outdoor applications. That means that the temperature is kept above the dew point so that no water condenses out of the air, which could lead to short circuits due to the formation of condensation.

Hygrostats

Hygrostats switch on electrical enclosure heaters or Filterfans® when a preset relative humidity is exceeded. The relative humidity is kept above the dew point and the condensation of water on electrical components and the corrosion of unprotected sheet metal is prevented. A new electronic combination device unites thermostat and hygrostat in one housing.

PFH-T Fan Heaters with Thermostat

The PFH-T fan heater with thermostat is designed to protect electronics from the effects of low temperatures such as corrosion, freezing or condensation, which can damage critical components within a control enclosure.

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Pfannenberg's SERVICE PROGRAM

Designed to Keep You Up and Running 24/7

ONE-STOP-SHOP SOLUTIONS PROVIDER

Pfannenberg's innovation has made it one of the world's leading manufacturers of Thermal Management and Process Cooling Equipment. We have flexibility and can work with you to find the combination of programs and services we provide to best suit your needs. Our comprehensive service team is available wherever and whenever you need it, worldwide.

Visit us at: **https://www.pfannenbergusa.com/services/**

INSTALLATION & COMMISSIONING / IN-HOUSE AND ON-SITE REPAIRS
PREVENTATIVE MAINTENANCE / SPARE PARTS / EXTENDED WARRANTY

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Pfannenberg SIGNALING TECHNOLOGIES

Visual and Audible Alarms for Industrial Safety

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