CONNECT AND PROTECT

Climate Control Solutions

nVent

HOFFMAN

nVent HOFFMAN Climate Control Solutions

nVent HOFFMAN Climate Control Solutions help create optimal conditions for the reliable operation of electronic and electrical components in a variety of **industrial, data networking, telecom, battery and energy storage, solar energy and commercial applications.** With a broad portfolio including: chillers, air conditioners, filter fans, heat exchangers, and integrated cooling enclosures, nVent HOFFMAN assures maximum productivity and uptime while protecting the life cycles of controls and equipment.

As a premier global provider with decades of experience in cooling industrial automation and electrical components, nVent HOFFMAN has an industry-leading portfolio of proven products, pre- and post-sale support, and comprehensive engineering and testing services.

REASONS TO CHOOSE NVENT HOFFMAN FOR YOUR CLIMATE CONTROL SOLUTIONS

- Over 2,000 UL®-certified standard cooling, heating, and climate-control products for reliable operation and longer life of protected components
- Cooling specification is easier with our Climate Control Selection Tool that will help you find the ideal cooling solution
- Many of our Climate Control products are stocked locally and supported by a vast distribution network for quick availability and service. Others, like our Industrial Chillers, are configurable to optimize equipment performance and are made to order
- State-of-the-art, in-house laboratory testing, validation, and global agency certification services
- 60+ years of custom engineering experience

THE ADVANTAGES OF COMBINING NVENT HOFFMAN ENCLOSURE AND CLIMATE CONTROL SOLUTIONS

- Ensures complete solution is engineered to maintain rating and certification
- Single-source accountability for support and service
- Ease of specification, ordering, and purchasing
- Reduced lead times and elimination of miscommunication between multiple vendors

For more information: nVent.com/HOFFMAN

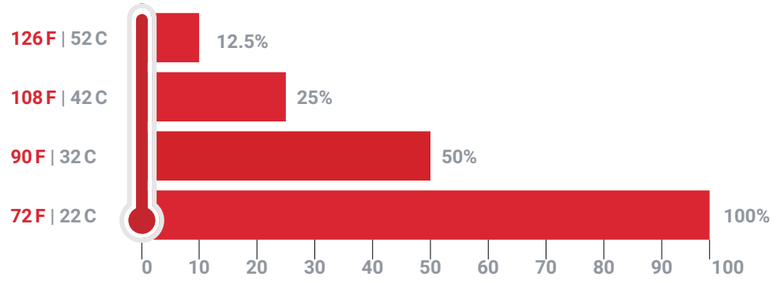
BUILDING A MORE SUSTAINABLE AND ELECTRIFIED WORLD

Resiliency and Protection | Lifespan and Serviceability | Energy Efficiency | Eco-Friendly

Why Use Cooling?

Heat damages and reduces the life of your electronics

Electronics Life Expectancy is Reduced by Half with Every 10C/18F Rise Above Room Temperature



The life expectancy of electronics is cut in half every 18 F/ 10 C they operate above room temperature.
(Source: Digital Equipment Corporation study)

KEEPING YOUR ELECTRONICS COOL IS ESSENTIAL TO MAXIMIZING THE LIFE CYCLES OF YOUR ELECTRONIC DEVICES, REDUCING CAPITAL EXPENSES, AND KEEPING YOUR BUSINESS RUNNING. HEAT CAN HAVE A SIGNIFICANT IMPACT ON ELECTRONICS, REDUCING PERFORMANCE, CAUSING DAMAGE, AND AFFECTING MANUFACTURER WARRANTIES.

SOURCES OF DAMAGING HEAT

Heat can be generated internally by electronic components and intensified by external sources. Inside a cabinet, uncooled components can generate as much trapped heat as a home furnace. Common sources of heat in an enclosure are:

- Air Conditioner power supplies
- Controllers, drives and servers
- Transformers and rectifiers
- Processors and server racks
- Radio equipment

Heat is also generated from sources outside the enclosure such as:

- Solar heat gain
- High ambient temperature
- Welding processes
- Furnace or ovens

TRENDS TOWARD MORE HEAT

With expanding deployment of smaller, more powerful, and more portable mission-critical electronics into increasingly harsh environments and conditions and the adoption of liquid cooling, cooling and thermal management is now a primary engineering consideration. The density of modern electronics in smaller cabinets intensifies heat issues that can compromise component performance.

CONSEQUENCES OF HEAT

Heat build-up can affect industrial controls or machinery creating the potential for:

- Hours of factory downtime
- Increased maintenance and repair time and cost
- Frequent replacement of costly control components
- De-rated component performance or failures
- MTBF decreases exponentially
- Warranty revocation
- Late shipments
- Customer dissatisfaction
- Lost revenue
- Service outages

Extreme Environments Air Conditioner

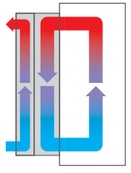
Cooling Strategies

nVent HOFFMAN climate control solutions characteristics

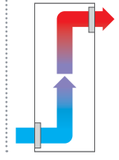
Climate Control Type	Air Conditioners 	Air-to-Water Heat Exchangers 	Air-to-Water Heat Exchangers 	Thermoelectric Coolers 	Vortex Coolers 	Filter Fans 	No Cooling
How-It-Cools	Forced Air, refrigerant based technology that removes warm air from the enclosure, and cycles cool air back in.	Heat is removed from the enclosure with cooled water, no refrigerant or moving parts exposed to environment.	Heat is removed from the enclosure with cooled air, no moving parts exposed to environment.	Peltier effect technology for small enclosures or low heat load environments, no moving parts or liquids.	Chilled air is generated to cool small enclosures without refrigerants or moving parts.	Forced ambient air is brought from outside the enclosure to inside the enclosure.	Heat radiates through enclosure walls.
Environment Type	**Hot Environments** (Typically up to 55 °C/131 °F for both inside and outside) **High Heat Load** (300 W-17,300 W) **Corrosive/Harsh/Humid Environments** **Hazardous Locations**	**Hot Environments** (Typically up to 50 °C/122 °F for inside cabinet temperature and up to 70 °C/158 °F for ambient operating temperature) **High Heat Load** (870 W to 6700 W) **Extremely Dirty/Dusty Air**	**Cool Air Environment** (Typically up to 60 °C/140 °F) **Moderate Heat Load** (7-150W/F) **Dirty/Corrosive Environments** **Hazardous Locations**	**Hot Environments** (Typically up to 55 °C/131 °F) **Low Heat Load** (60-200 W) **Remote/DC-powered applications**	**Very Hot Environments** (Typically up to 80 °C/175 °F) **Heat Load** (up to 1,465W) **Corrosive/Harsh/Humid Environments** **Hazardous Locations**	**Cool/Clean Air Environment** (Typically up to 55 °C/131 °F) **Capacity** (Up to 484 CFM free air flow)	**Cool/Clean Air Environment** (<78 °F/25 °C) **Low Heat Load** (<50 W)
Where-To-Use	Indoor or Outdoor Industrial manufacturing Telecommunications Wastewater treatment Oil & Gas operations Food and Beverage	Extreme conditions where air conditioners would be subject to failure Automotive manufacturing Machine tool Packaging Oil & Gas operations	Indoor or Outdoor Telecommunications Light-duty manufacturing Oil & Gas operations	Indoor or Outdoor Telecommunications Battery cabinets Industrial Security systems	Heavy manufacturing Metal working Oil rig/refinery Oil & Gas operations	Industrial manufacturing Indoor or Outdoor Data networking	Where enclosed components operate within recommended temperature range
Cooling Technology	**CLOSED LOOP**					**OPEN LOOP**	**CONDUCTIVE**

Ability to remove heat from enclosure: **HIGH** — **MODERATE** — **LOW**

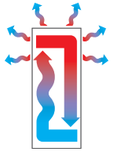
SOLUTIONS TO MAXIMIZE THE OPERATIONAL LIFE OF YOUR ELECTRONICS



Closed Loop: Air inside the enclosure is recycled, removing the risk of introducing moisture or contaminants into the enclosure.



Open Loop: Fresh air from the outside of the enclosure is forced inside of the enclosure.



Conductive, or passive cooling, is when heat radiates through the enclosure wall.

How-to-Select an Air Conditioner

Class 1 Div 2
Groups A, B, C, D

Models Available for Hazardous Locations

Suitable for Sanitary Application

01 How large is my enclosure?

02 What cooling capacity is required?

03 What is the environment?

						
	T-Series Compact Compact ACs with small footprint, designed to blend into surroundings.	**SpectraCool Narrow** Provide rugged, space-saving solution for use on low-depth enclosures.	**SpectraCool** Reliable cooling for in full spectrum of environments, and enclosures.	**SpectraCool Narrow** Provide rugged, space-saving solution for use on low-depth enclosures.	**SpectraCool** Reliable cooling for in full spectrum of environments, and enclosures.	**Extreme Environments Series** Designed for the most rugged and sanitary applications.
01 Size (H x W xD)	For small enclosures, starting at: 14 x 8 x 6 in.	For medium enclosures, starting at: 17 x 8 x 6 in.	For large enclosures, starting at: 30 x 17 x 10 in.	For medium enclosures, starting at: 17 x 8 x 6 in.	For large enclosures, starting at: 30 x 17 x 10 in.	For small-to-medium enclosures, starting at: 29 x 10 x 14 in.
02 Capacity	800 to 2000 BTU/hr	1000 to 11000 BTU/hr	4900 to 20000 BTU/hr	1000 to 11000 BTU/hr	4900 to 20000 BTU/hr	2000 BTU/hr
Material	Galvanized Mild Steel			Stainless Steel 304 or 316L		Stainless Steel 304
Protection Rating	NEMA Type 12, 3R, 4, IP34, P56			NEMA Type 4X, 3R, IP34, IP56		NEMA 12, 3R, 4X IP34, IP66, IP69, IP69K
03 Environment	**INDUSTRIAL GENERAL PURPOSE** Designed for general Industrial applications.			**INDUSTRIAL HARSH / HEAVY DUTY** The same Industrial features, with more robust and sanitary design.		**INDUSTRIAL EXTREME ENVIRONMENTS** Designed for the most rugged and sanitary applications.
				WITH ADVANCED CORRISION COATINGS (ACP) ACP offers protective coatings on critical components for harsh, corrosive or chemical environments		

LOW — HIGH

Environmental impact on equipment

How-to-Select a Chiller

01 What is the type of fluid?

02 What cooling capacity is required?

03 What is the environment?

04 What is the application?

TCW
Water Minichiller
Compact water chillers providing precision and reliabilty to protect machinery and processes.

TAL
Water Chiller
Scalable and configurable water chillers optimized to fit your specific application needs across industries.

01	Fluid	Water, Water/Glycol	Water, Water/Glycol
02	Capacity	3,200*–15,000 BTU/hr 900 W–4.5 kW	9,200–187,000 BTU/hr 2.7 kW–55 kW
03	Environment	Indoor	Indoor or Outdoor
04	Application	**INDUSTRIAL GENERAL PURPOSE** MACHINE TOOLING, LASER CUTTING, PLASTICS, BATTERY ENERGY STORAGE Pair with Air-to-Water Heat Exchangers	

*Chillers as low as 3,200 BTU/hr. Capacity will vary based on region

Learn more about nVent HOFFMAN Chiller Solutions

Aftermarket Service - Preventative Maintenance

Choose the Aftermarket Service Plan that's right for your business

Performing preventative maintenance helps to keep your nVent HOFFMAN Air Conditioner unit operating at the highest most efficient levels. Maintenance should be performed at least twice a year, more frequently when in challenging conditions, such as dusty, high humidity, high heat, oily or corrosive environments. We offer a 12 point inspection service for all nVent HOFFMAN Air Conditioner units as well as many of our competitors air conditioner units.

Plan Features	Feature Descriptions	Service Plan Types: Installation	Standard Repair	Extended	Preventative	Extended + Preventative	Customized
Complimentary technical service	Telephone and email support at no additional cost.	✓	✓	✓	✓	✓	✓
Breakdown Repairs	Response within 1 business day; onsite within 3 business days in US & Canada (May vary in other regions). Convenience of onsite repairs available for most repairs. Parts for service repairs are shipped overnight. Some exclusions apply.	✓	✓ ✓ ✓	✓ ✓ ✓	✓	✓ ✓ ✓	✓ ✓ ✓
Emergency Diagnostic	For an additional fee, receive emergency diagnostics. Repair at first visit if resolution does not require a part or technician has part on hand. Repair could take up to additional 2 business days if part needs to be ordered from the factory (Available in US & Canada).		*	*		*	Create a plan per your needs
Fixed Pricing	Known upfront costs. Preventative Maintenance may have additional cost. Discounts applied when both Extended Warranty and Preventative Maintenance services are purchased.			✓	✓	✓ ✓	
Preventative Maintenance	Preventative maintenance per 12 point checklist by an nVent HOFFMAN technician on a scheduled basis. Filters are included for nVent HOFFMAN air conditioner units. Customer must supply parts for competitors units.				✓ ✓	✓ ✓	
Scheduled Interval	Schedule maintenance in advance to minimize downtime.				✓	✓	
Spare Parts Support Kit	Purchase spare part kits of common wear items						
Swap Unit	Purchase a swap unit to minimize downtime in critical situations.						
Installation service	Units installed by a certified technician.	✓					

✓ Included in Plan
* Available at additional cost

Aftermarket Services

Coverage you can count on

8,000
AUTHORIZED TECHNICIANS WORLDWIDE

FACTORY-AUTHORIZED SERVICE AVAILABLE AROUND THE GLOBE

With nVent HOFFMAN, you're assured of the most complete maintenance and service offerings. That means reduced downtime, higher levels of overall system performance, and maximum operational life for your protected equipment. Our product quality and complete aftermarket care keeps your equipment running. nVent HOFFMAN offers pre- and post-sales services and support to let you choose the right cooling product for the job, and tailor the level of assurance you need to mitigate risks.

Our plans and offerings include:

- A choice of flexible service plans that can be customized to your needs
- Preventative maintenance services
- Extended product warranties
- Installation, services, commissioning, and upgrades

AN UNRIVALED STRATEGIC PARTNERSHIP FOR THE MOST RESPONSIVE LOCAL SERVICE

Through partnership with JNW, nVent HOFFMAN offers unsurpassed service presence and response in North America with expertise that reaches worldwide. JNW delivers full-service capabilities and complete in- and out-of-warranty service for nVent HOFFMAN climate control solutions from over 1000 local service locations worldwide.

Through JNW, nVent HOFFMAN offers:

- Online service requests
- Factory-authorized expertise to service all nVent HOFFMAN climate control products
- Local service around the globe
- In-stock availability for selected cooling parts
- Global coordination of service and maintenance programs
- Expedited service and parts availability
- Reporting capabilities including up-to-date status monitoring

Aftermarket Services
Warranty, repair, maintenance & install service and technical support

nVent.com/HOFFMAN/cooling-aftermarket-services

Application Technical Support
Sizing, specifications, drawings and spare parts availability

Email: Cooling.support@nVent.com
Phone support: +1 763-422-2211
(follow the prompts)

nVent HOFFMAN Complimentary Thermal Audit Service

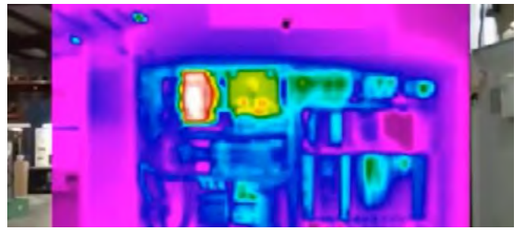
WHAT IS AN NVENT HOFFMAN THERMAL AUDIT?

A thermal audit is a FREE service that nVent HOFFMAN reps and distributors provide in three steps:

01

Enclosure Inspection

An nVent HOFFMAN specialist will identify and inspect every enclosure and cooling unit in your facility as well as analyze the environment.



02

Thermal Analysis

The specialist will then take an in-depth look inside your enclosures to identify problematic electronics and components.

03

Thermal Audit Report

After an audit is conducted, a personalized report will be provided of all the enclosures with solution recommendations.

HOW DOES AN NVENT HOFFMAN THERMAL AUDIT WORK?

A thermal audit quickly identifies problem areas and offers compelling evidence of excess heat that can affect performance and potentially damage your critical equipment. We will then recommend nVent HOFFMAN enclosure heating and cooling solutions to help you maximize uptime and reduce maintenance costs.

NOTE: nVent HOFFMAN Chillers are excluded from the Thermal Audit Program

BENEFITS OF AN NVENT HOFFMAN THERMAL AUDIT

- Extend operational life
- Prevent catastrophic failure
- Sustain productivity
- Maintain equipment warranties

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King's Centre, #04-02
Singapore 169662
Tel: +65 6768 5800

Our powerful portfolio of brands:

CADDY ERICO HOFFMAN ILSCO RAYCHEM SCHROFF

nVent

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