



# COM4T

Heating and Cooling Solutions for the  
Modular Buildings, Education Industries  
and Light Commercial Applications

# ABOUT US

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AIRSYS Cooling Technologies Inc., is a global cooling solutions provider with products and engineering services designed to provide a wide variety of solutions for schools, data centers, mobile shelters and outdoor telecom cabinets. Whether the products are used for sensible cooling telecommunication environments, or for human comfort, the AIRSYS team of highly trained technicians can assist their client's through every step of the deployment process from design through maintenance.

## 25th ANNIVERSARY

AIRSYS has reached an exciting milestone in 2020 with the company's 25th anniversary as an award-winning supplier of the world's most energy efficient cooling solutions.



## RESEARCH AND DEVELOPMENT

As a global manufacturer of high-performance air-conditioning equipment, AIRSYS is committed to providing highly reliable and energy efficient cooling solutions for critical environments. At AIRSYS we are focused on progressive technologies for the HVAC industry. Through our large research and development division, we proudly develop new equipment that utilizes inverter driven technologies, coupled with precise controls to maximize the designed load calculations for a given space.

## MANUFACTURING FACILITY

Located in the manufacturing belt of the Carolinas in Spartanburg County, AIRSYS operates out of a 60,000 square foot manufacturing facility and corporate headquarters. Our teams of highly trained technical, sales and field services staff are veteran HVAC industry insiders who all work together to provide 24/7 customer assistance for our clients.

# GLOBAL FOOTPRINT

The AIRSYS Group has multiple subsidiaries located around the world. We currently have two primary manufacturing facilities, one located in China and the other in the United States. We have served more than 45 countries around the world and continue to provide global support for our trusted partners.



## APAC

China  
Korea  
India  
Singapore  
Malaysia  
Philippines  
Indonesia  
Australia  
Pakistan  
Bangladesh  
Kazakhstan  
Nepal  
Oman  
Cambodia

## Europe

UK  
Germany  
Italy  
Spain  
Romania  
Serbia  
France  
Poland  
Turkey  
Russia

## LATAM

Brazil  
Argentina  
Peru  
Ecuador  
Colombia

## Africa

South  
Africa  
Kenya  
Nigeria

## NORAM

USA  
Canada

# CORE COMPETITIVENESS

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**Energy efficiency,  
Intelligent Control, High  
Reliability.**



**Best value in Capital Expenditures  
(CAPEX) and lowest in Operational  
Expenditures (OPEX)**



**Responsiveness**



**Strong R&D capability**



**Global Footprint  
providing turn-key  
service**



**Leading Edge  
Technologies**



**Lowest Total Cost of  
Ownership (TCO)**



**Best in class  
manufacturing facility**

AIRSYS

**BALANCE THE ENVIRONMENT.**

# SERVICE



Consultation



Design



Products



Engineering



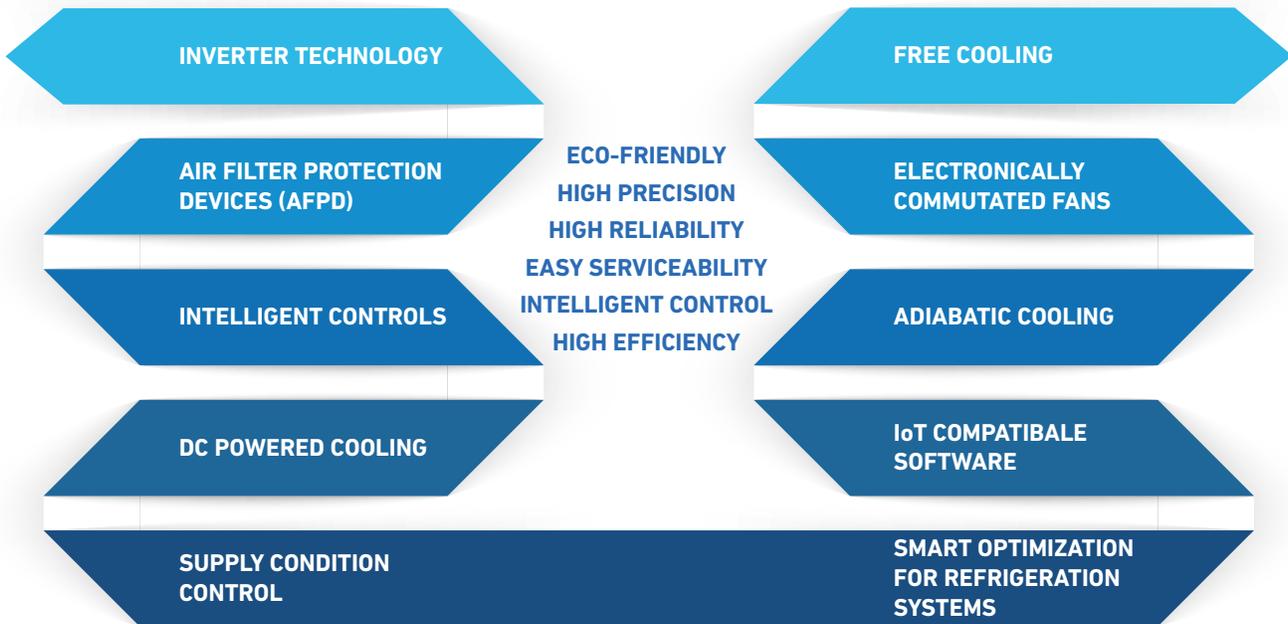
Service

# TECHNOLOGIES

At AIRSYS we believe in the quality of the product throughout its entire life cycle, including research and development, pilot testing, manufacturing, sales, and service. Therefore, we feel it is necessary to ensure quality control at all points throughout the product's life cycle. We oversee the entire process and have full participation in total quality management, so that quality standards continue to be met (or exceeded) and that customer satisfaction with our product is always ensured.

We proudly engineer the following ten technologies into each of our products. To balance the environment and forge ahead as a leading manufacturer of high performance HVAC products, these ten technologies are necessary to give our clients the highest quality products that reduce overall energy consumption, and provide high reliability for years to come.

## 10 CUTTING EDGE TECHNOLOGIES USED IN AIRSYS PRODUCTS



# PRODUCT OVERVIEW

The heat pump system used in our COM4T units is designed with advanced inverter driven technology to provide variable speed capacity. Our COM4T units lead the industry in quiet operation, energy efficiency, reliability and comfort control.

Our COM4T heat pumps are wall mounted packaged units, that are available in a complete line of models for indoor and outdoor applications. We also offer electrical options for both single and three phase. The refrigerant piping and internal wiring are factory assembled and thoroughly tested. All components are readily accessible for easy service and maintenance.

## FEATURES

- Inverter Driven Technology
- Indoor and Outdoor Wall-Mounted Packaged Units
- Designed for Human Comfort
- Variable Capacity
- Heat Pump



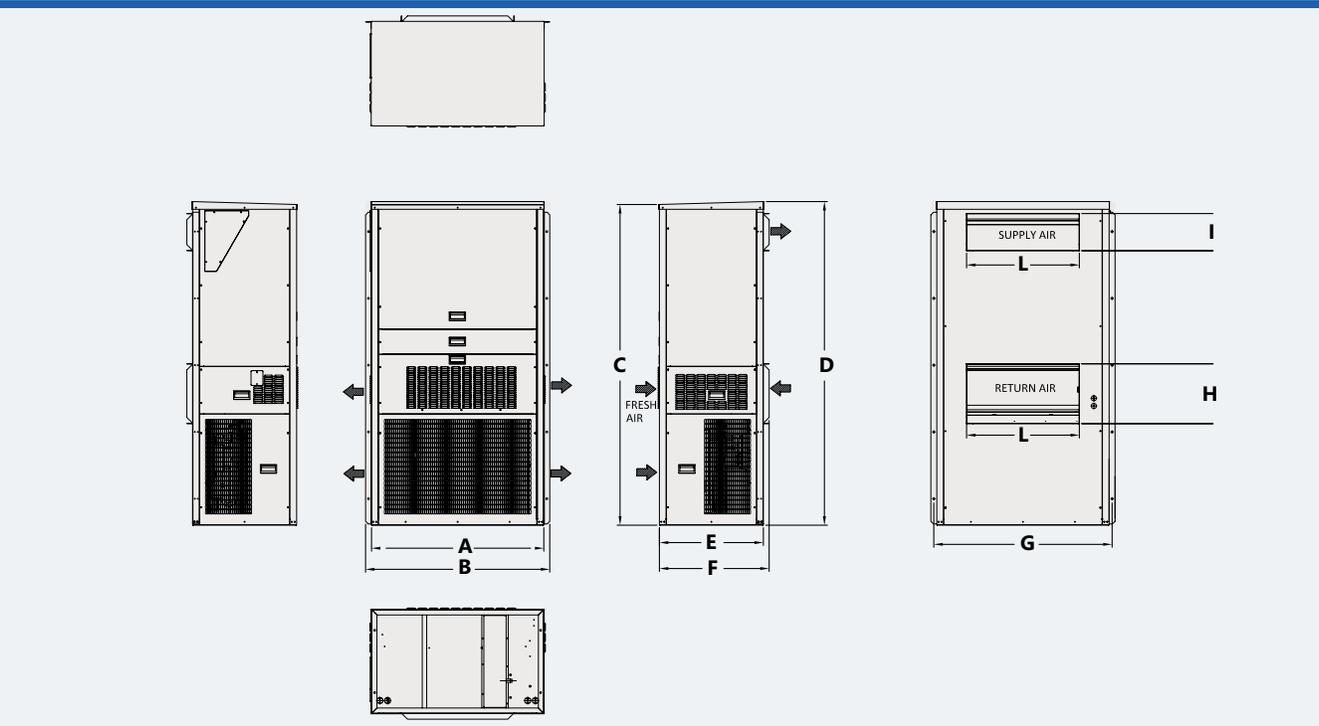
## TECHNICAL PARAMETERS

Series	Model	Cooling Capacity*	Heating Capacity*	Fresh Air Volume	PTC Heater	ERV	CRV	Economizer
Heat Pump Outdoor	CV36H2A	17,600~42,200Btu/h	17,100~41,000Btu/h	~450CFM	0~10kW	√	√	√
	CV60H3A	28,300~67,800Btu/h	28,000~67,200Btu/h	~550CFM	0~10kW	√	√	√
Heat Pump Indoor	CV36N3A	17,600~42,200Btu/h	17,100~41,000Btu/h	~450CFM	0~10kW	√	√	√
	CV60N3A	28,300~67,800Btu/h	28,000~67,200Btu/h	~550CFM	0~10kW	√	√	√

NOTE: Cooling capacity @ 80 °F/95 °F; heating capacity @ 70°F/47 °F.

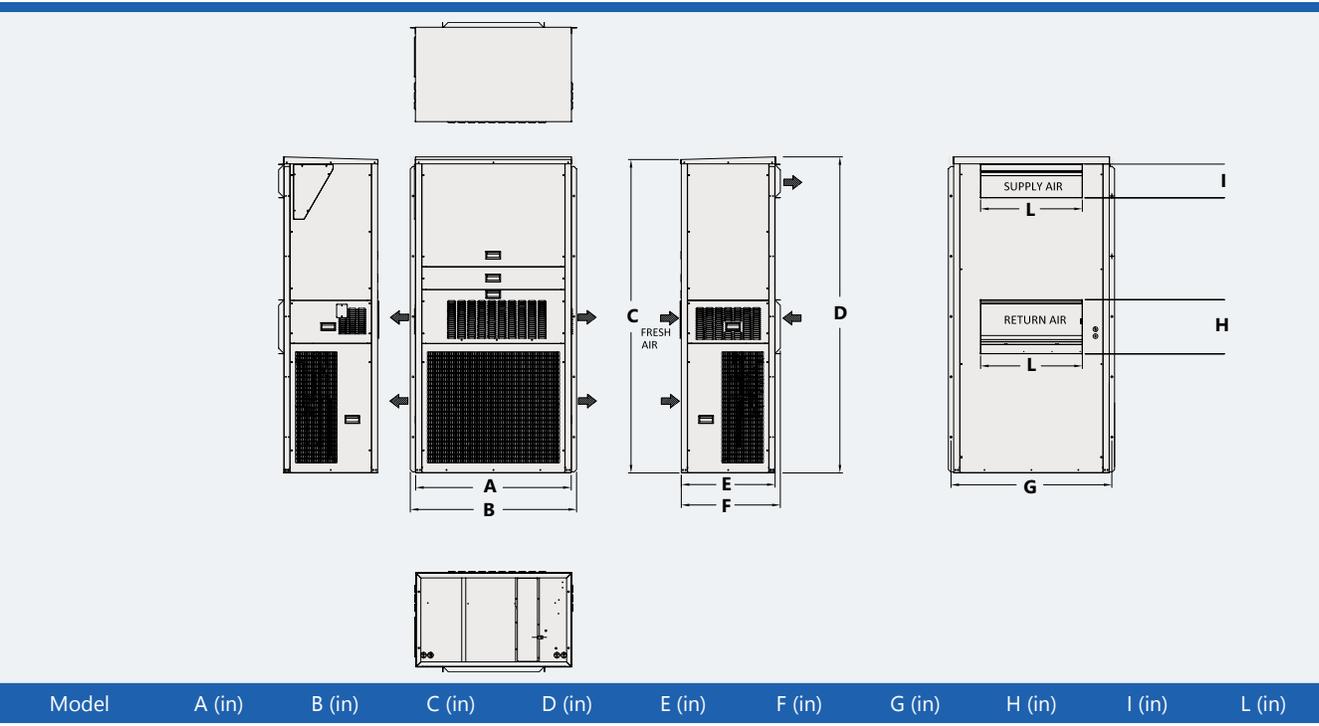
# UNIT DIMENSIONAL DRAWINGS

## CV36H2A



Model	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	G (in)	H (in)	I (in)	L (in)
CV36H2A	45 11/16	48 13/16	85 1/16	85 13/16	27 9/16	29 1/16	47 1/4	15 7/8	9 13/16	29 7/8

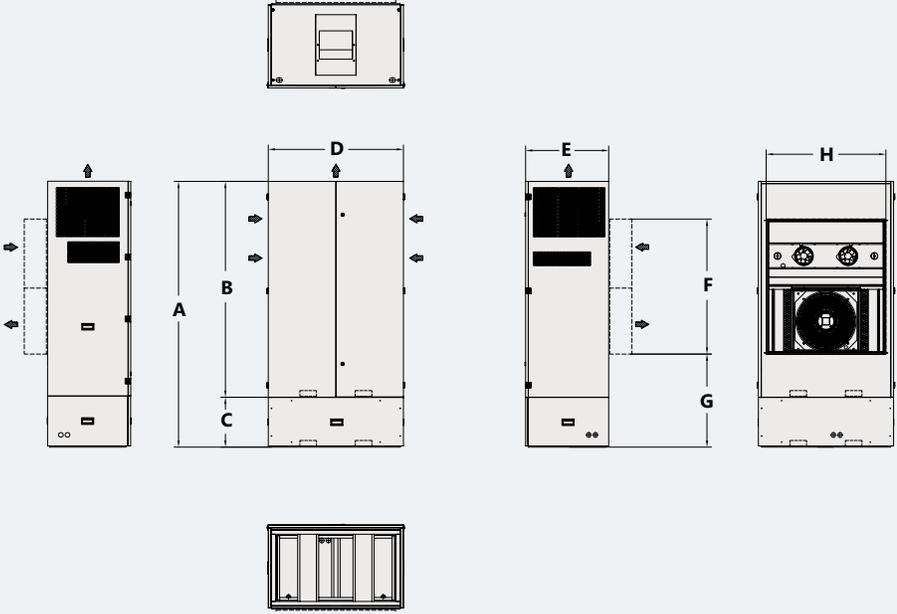
## CV60H3A



Model	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	G (in)	H (in)	I (in)	L (in)
CV60H3A	45 11/16	48 13/16	92 1/8	92 15/16	27 9/16	29 1/16	47 1/4	15 15/16	9 15/16	29 7/8

# UNIT DIMENSIONAL DRAWINGS

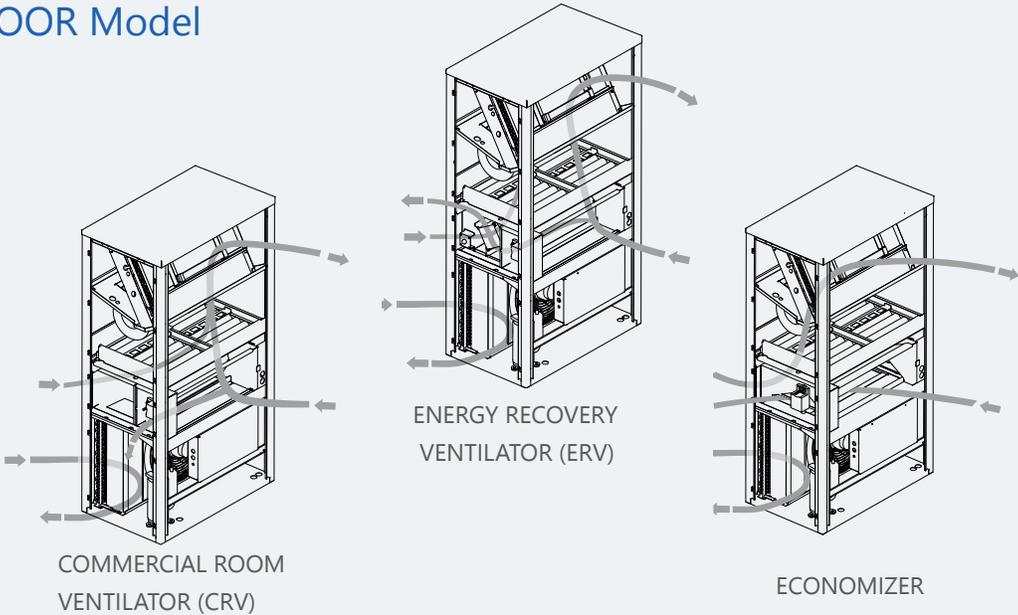
CV36N3A // CV60N3A



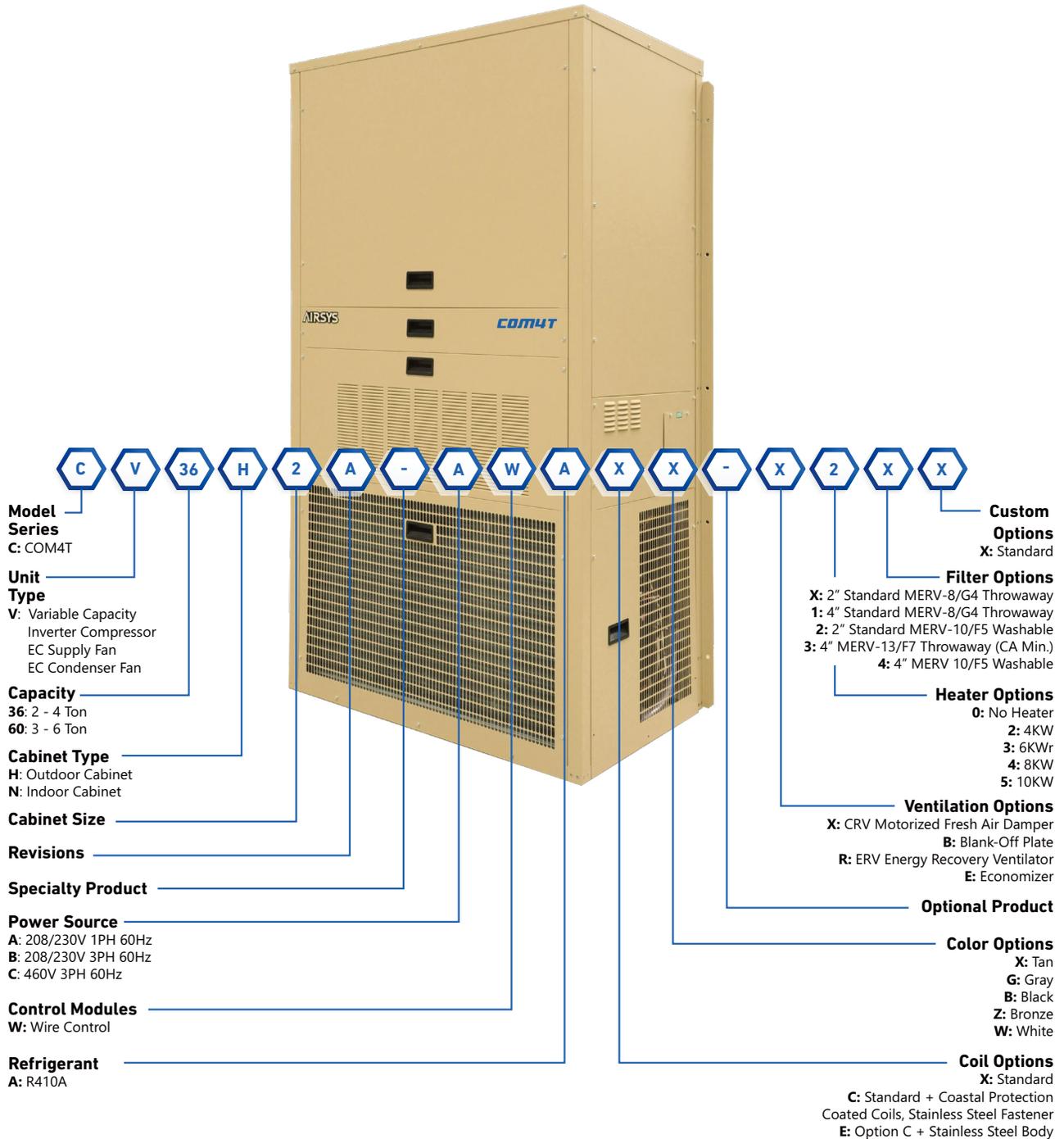
Model	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	G (in)	H (in)
CV36N3A//CV60N3A	94 1/2	76 3/4	17 11/16	48 1/16	27 1/2	48 1/16	33 1/16	42 1/2

# AIR FLOW DIAGRAMS

## OUTDOOR Model



# MODEL NUMBER NOMENCLATURE



**For Example:**

Model **C V 3 6 H 2 A - A W A X X - X 2 X X** stands for a COM4T Unit Model Series (**C**) with Variable Capacity Inverter Compressor, EC Supply Fan, EC Condenser Fan (**V**), 2 - 4 Ton Outdoor Cabinet (**H**), 208/230V 1PH 60Hz power (**A**), Wire control (**W**), R410A refrigerant (**A**), Standard Coil (**X**), Tan Color Option (**X**), CRV Motorized Fresh Air Damper (**X**), 4KW Heater (**2**), 2" Standard MERV-10/F5 Washable (**2**).

**Note:** \*If multiple units are ordered, one Multi-unit control box is required.

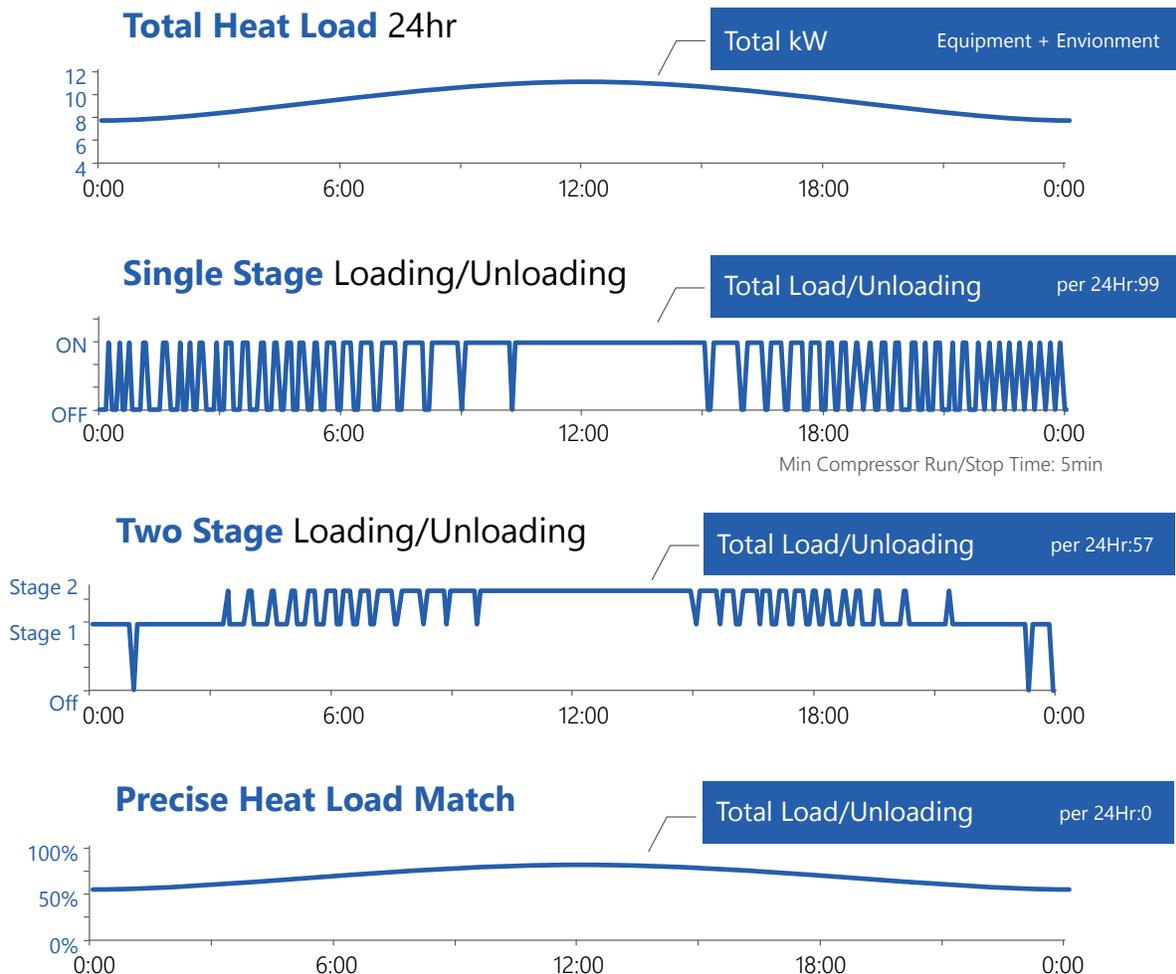
# ENGINEERED FEATURES

## VARIABLE CAPACITY COMPRESSOR

### Precise Heat Load Match

Loading and unloading between stages of cooling introduces most of the mechanical stress on a compressor. The turn on of a fixed compressor wears down contactors and the resulting inrush current wears down other electronics. Even for properly sized units and properly set minimum compressor run/stop timer, the loading and unloading can reach one hundred times a day which would be > 30,000+ times per year.

Our COM4T units precisely match the heat load at all times through variable capacity compressor technology, which minimizes sudden loading and unloading of the compressor, vastly extending the life and reliability of the entire cooling system.



# ENGINEERED FEATURES

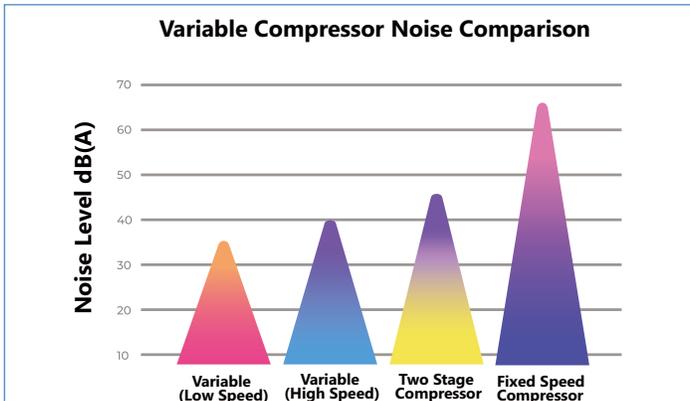
## Quiet Operation

A better understanding of how critical sound impacts children's habits in the classroom has led us to pay maximum attention on minimizing noise levels.

Determined by the certified noise testing party DL Acoustics Research & Consulting, AIRSYS COM4T units only generate 36.7dBA at low speeds and only 39.3dBAs at high speeds. At high speeds, the COM4T unit is > 70% quieter than the noise level required by the most stringent code in the country at 45dBA. The COM4T unit delivers quiet comfort allowing our children more enhanced concentration in the learning environment.

## Quiet Mode

Quiet mode further reduces noise by 5-7 dBA by limiting the maximum frequency the compressor may run at. Maximum cooling capacity will be reduced by 15% and Turbo Boost will be disabled when quiet mode is enabled.





### Soft Start

Instead of sudden and numerous starts and stops, the variable capacity compressor will ramp up capacity at startup and continuously modulate capacity to match the load of the shelter. This means generators no longer need to be sized to Locked Rotor Amps and a smaller generator and transfer switch system can be used. Soft start has the following advantages:

- Minimizes mechanical stress during the start up of the compressor
- Eliminates spike voltage on start up
- Reduced noise from sudden compressor loading

### High Quality Components Used in Every COM4T Unit



# ENGINEERED FEATURES

## 1 Fresh Air Intake Options

Commercial Room Ventilator (CRV), Energy Recovery Ventilator (ERV), and economizer options offer different fresh air intake options to meet indoor air quality requirement as established by ANSI/ASHRAE Standard 62.1.

## 2 Variable Speed EC Fans

Quiet and efficient variable speed supply and condenser fans provide a highly favorable energy efficiency curve when compared to conventional fans.

## 3 Indoor and Outdoor Configurations

Versatile installation configurations available for both outdoor wall mount and indoor floor mount models.

## 4 Dual Layer Exterior Protection

Galvanized steel exterior coated with an additional layer of thermoset polymer provides two layers of protection against corrosion.

## 5 Serviceability

The COM4T wall packaged unit design utilizes the same hole pattern as most modern day Single Packaged Vertical Units (SPVU), thereby saving money on installation. Curb options offer adaptability for different applications.

Front serviceability and snap in/snap out components make maintenance and repair a breeze. The COM4T unit system is designed for quick serviceability that enables local facility engineers to work on them with ease saving thousands of dollars in repairs

by not having to hire costly HVAC technicians. The step-test systematically verifies normal operation of key components in the system which aids the service technician in isolating problems quickly. There is no need for special thermostats or controllers. Almost any thermostat can control the COM4T units.

## 6 High Quality Components

Our research and development team at AIRSYS spared no expense in making sure the top components in the industry went into the design of the COM4T unit. We designed for long term reliability with best in class components to minimize maintenance and repair costs throughout the product's operational life.

## 7 Electronic Expansion Valve (EEV)

The EEV allows the compressor to always run at the optimal condition, thus delivering superior energy consumption in a wide range of environmental conditions.

## 8 Low/High Pressure Protection

High and low pressure sensing protects the compressor and refrigeration circuit against loss of refrigerant charge, dirty filter, restricted outdoor coil, and low air flow. When repeatedly engaged, the HVAC automatically locks out mechanical cooling for 12 hours or until power is reset.



## 9 Turbo Boost Mode

In some situations, such as extreme high outdoor temperature, or increased equipment load, the heat load of the building may exceed the nominal cooling capacity of the HVAC system. When this happens, Turbo Boost Mode can be engaged automatically to deliver up to 125% of the nominal cooling capacity at the expense of slightly lower efficiency.

## 10 Speed Modulation

Our COM4T Unit features speed modulation based on real-time environment demand for cooling and heating, the variable speed system continuously adjusts to small temperature fluctuations offering excellent temperature stability.

## 11 Infinite Step Variable Capacity Cooling and Heating

Variable Frequency Drive (VFD) technology offers up to 18 EER, the highest efficiency rating on the market for any single packaged vertical systems.

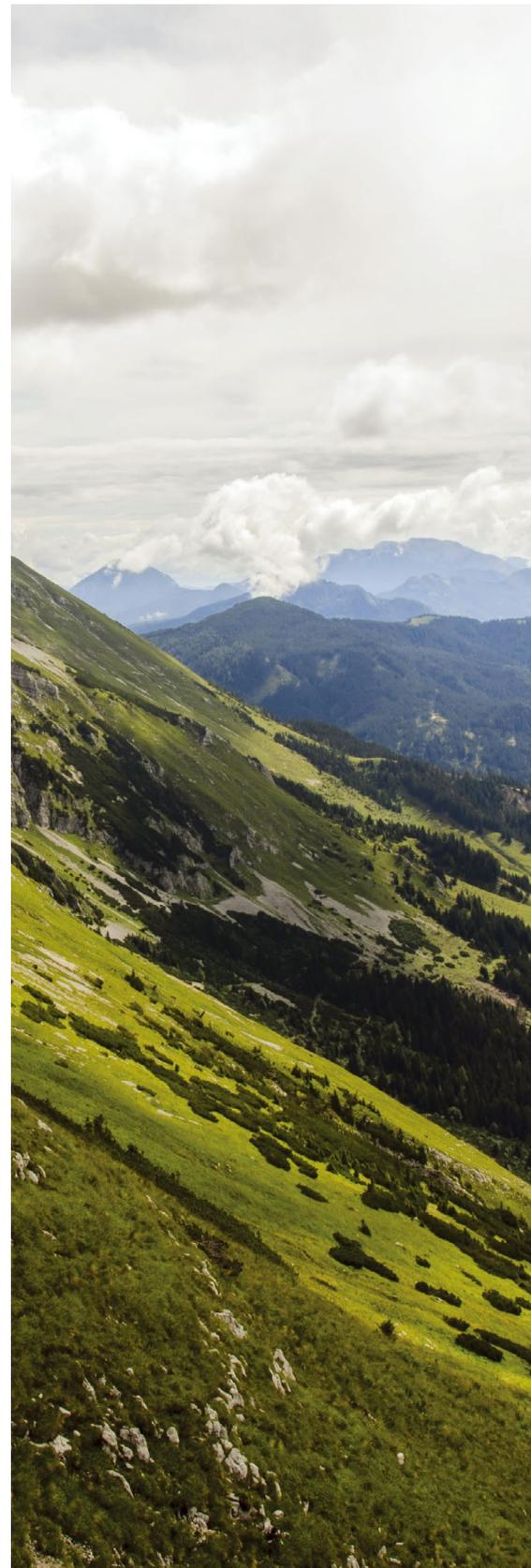
## 12 Comfort Control

AIRSYS COM4T units deliver real-time demand cooling and heating capacity according to the needs of the environment. The variable capacity system continuously adjusts with small temperature fluctuations increasing the accuracy of temperature control for more advanced human comfort.

In the event of a sudden dramatic change in the environmental load, our COM4T units can initiate overspeed operation to rapidly cool down or heat up a room. COM4T units detect the temperature changes in the room and react by adjusting motor capacity intelligently and smoothly to provide the optimal environment for human comfort.

## 13 Auto Defrost

Frost can build up on the outdoor coil when the heat pump is operating in low temperatures. This can adversely affect the rate of heat transfer. If conditions are met, automatic defrost will be engaged to prevent frost buildup.





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Product design and specification subject to change without prior notice.



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