



DIRECT AIR COOLING SYSTEM (DACS)

ALL MODELS

INSTRUCTION MANUAL

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WARRANTY AND RETURN POLICY

<https://hoffman.nvent.com/en/hoffman/warranty-information>

NOTE: Some of the information in this manual may not apply if a special unit was ordered. If additional drawings for a special unit are necessary, they have been inserted. Contact nVent Equipment Protection if further information is required.

For additional technical information, contact nVent Equipment Protection at 800-896-2665.

UNPACKING AND INSPECTION

Directly upon receipt, inspect the unit. Check for concealed damage that may have occurred during shipment. Any damage evident should be noted on the freight bill. Damages should be brought to the attention of the delivering carrier within 15 days of delivery. Save the carton and packing material and request an inspection. Then file a claim with the delivering carrier.

MODEL NUMBER NOMENCLATURE EXAMPLE

DCG2904248100 represents the following:

DC - Direct Air Cooling

G - Gore® Hydrophobic filters or T - MERV 12 pleated filter

29 - Approximate height of unit

042 - Cooling Capacity [Watts/°F] Watts dissipated for every 1°F rise in cabinet temperature above ambient

48 – Voltage DC

100 - Revision and/or options.

Note: The nomenclature is not intended to provide technical details for any unit. It is merely a guideline. For data see product Spec Sheets or contact the factory.

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APPLICATION

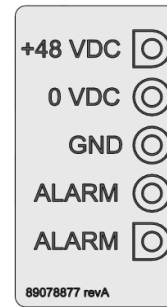
DACS (direct air cooling system) is designed to take outside air into the cabinet. Fresh air is circulated inside the cabinet to cool the enclosure. This means of cooling is very effective and economical. However, there are precautions that the user must be made aware of. Whenever you take outside air into a sealed cabinet, the risk of introducing airborne contaminants exists. The most prevalent are dust and water/moisture. System level testing at desired conditions should be performed by the end user to ensure the system meets all required environmental conditions.

To minimize the ingress of contaminants, these units are designed with either a pleated, replaceable MERV 12 filter at the intake or two Gore® hydrophobic filters located at each the intake and exhaust.

INSTALLATION INSTRUCTIONS

Mounting hole locations and sizes are shown in section DETAIL DRAWINGS on page 6. The DACS unit must be installed with a gasket included in the packaging. The gasket is installed on the enclosure side of the DACS. If removal of the DACS is required, it is recommended the gasket be replaced.

Attach the power cord and alarm harness to connector located on back of unit.



MAINTENANCE

Periodic maintenance must be performed to ensure filters are effective in allowing the required airflow and preventing debris from being passed.

Some other things to look for are:

- Damage to sheet metal that may allow the fan to rub during operation or ingress of debris into the cabinet
- Blocked airflow paths
- Connector integrity
- Ensure a good clean connection with no damage to wires
- Listen for unusual noises or excessive vibration

PERFORMANCE DATA

MODELS AND CATALOG NUMBERS			
Model	24098	24105	24104
Catalog Number	DCG2904248100	DCT5615048100	DCT3809448100
COOLING PERFORMANCE			
Nominal:			
Watts/°F	42	150	94
Watts/°C	75	270	170
Operating Temperature Range			
Maximum (°F/°C)	131/55	131/55	131/55
Minimum (°F/°C)	-40/-40	-40/-40	-40/-40
Airflow at zero static pressure (CFM / m3/hr)	130/221	470/799	300/510
ELECTRICAL DATA			
Rated Voltage (VDC)			
Operating Range (VDC)			
Max. Power Consumption (Watts)	159	192	173
Max. Nominal Current (Amps)	3.3	4.0	3.6

COMPONENT LIST

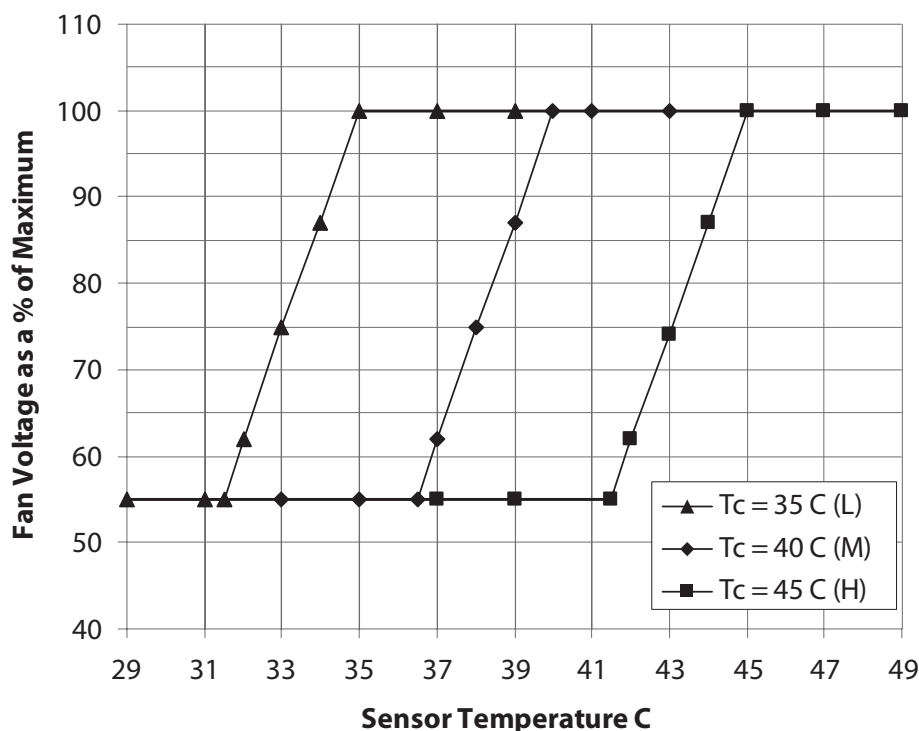
DCG2904248100		DCT3809448100	
Spare Part Description	Catalog Number	Spare Part Description	Catalog Number
Motorized Impeller	89078962SP	Motorized Impeller	89078962SP
Filter	89077023SP	Filter	89078306SP
Fan Controller	89073882SP	Fan Controller	89073882SP
Mounting Gasket	89078649SP	Mounting Gasket	89078641SP
		DCT5615048100	
		Spare Part Description	Catalog Number
		Motorized Impeller	89079119SP
		Filter	89077831SP
		Fan Controller	89073882SP
		Mounting Gasket	89077833SP

OPERATION

These DACS units incorporate a controller that varies fan speed dependent on the temperature of the air exiting the DACS unit. There are three control temperatures that are set with a jumper on the controller:

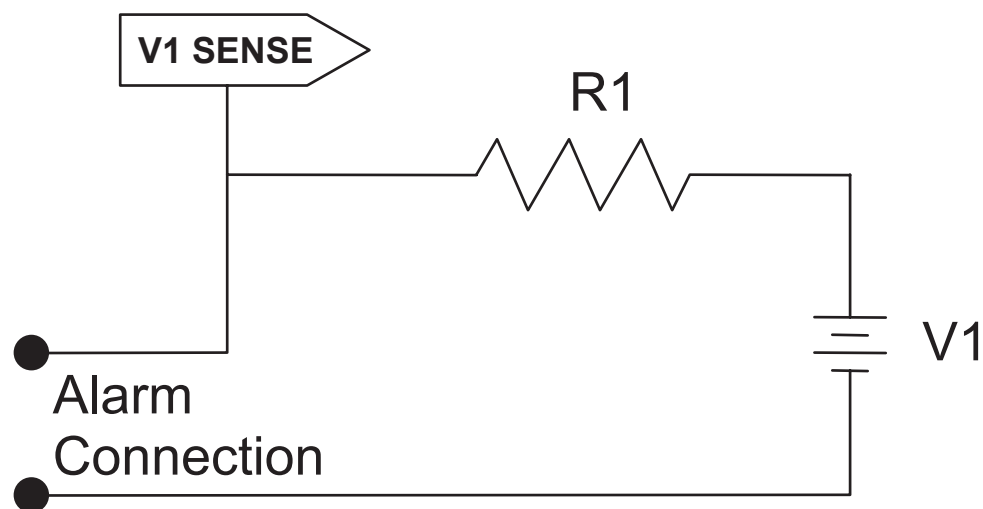
Control Temperatures	
Position on J7	Control Temperature
L	35 C
M (Factory Setting)	40 C
H	45 C

THE RELATIONSHIP BETWEEN FAN VOLTAGE AND SENSED TEMPERATURE IS SHOWN BELOW:



ALARMS

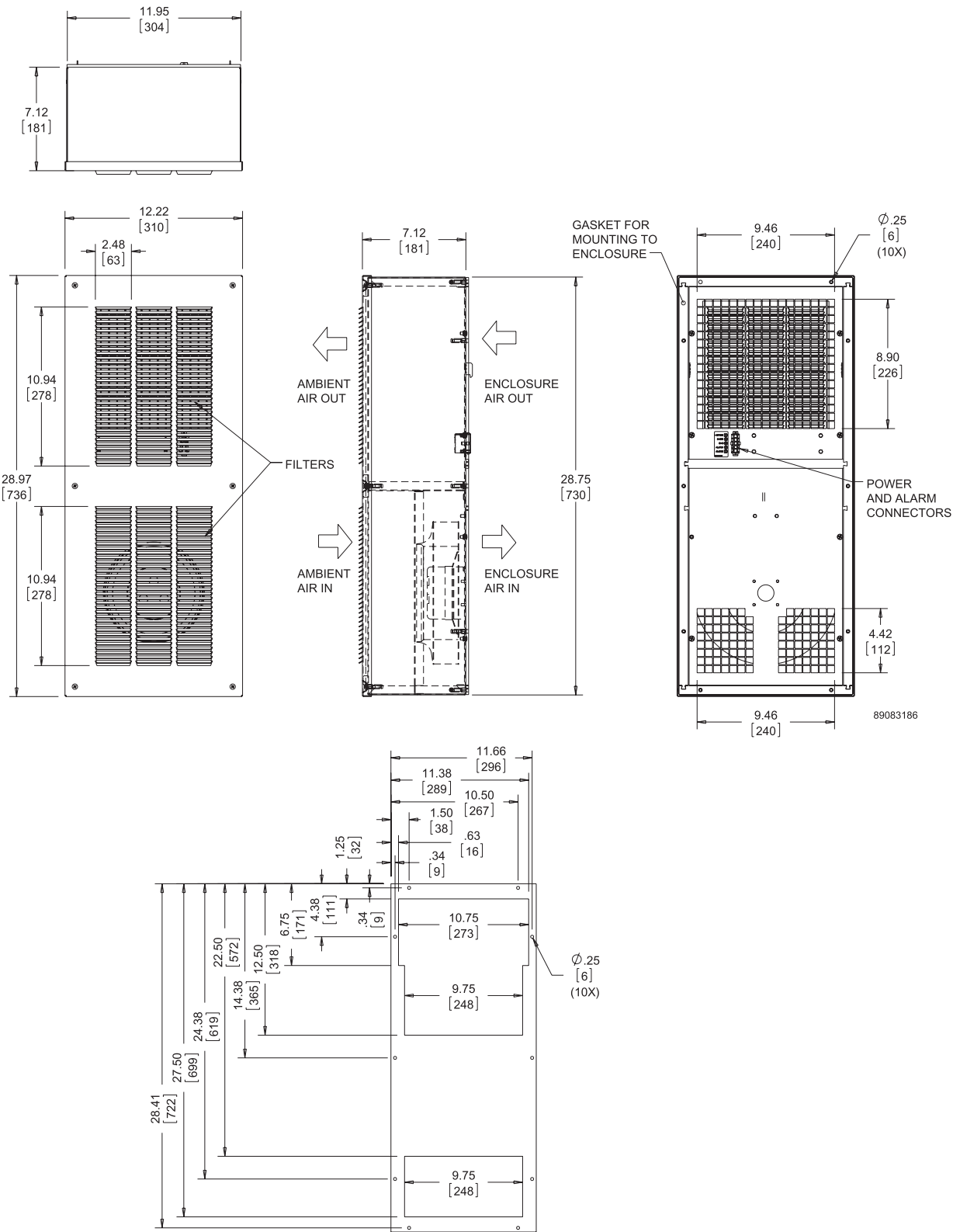
Fan speed controller provides a MOS relay alarm output to be connected as shown below. The current limiting resistor is calculated using $R1 = V1/100mA$ (Ohms), where V1 can be up to 230 VAC/VDC.



Alarm Logic at Connector	
Condition	Alarm Status
Sensed Temperature < 10 C above control temperature	Closed (Low resistance)
Sensed Temperature > 10 C above control temperature	Open (High resistance)
Power removed from DACS	Open (High resistance)
Open or Missing Thermistor	Open (High resistance)
Shorted Thermistor	Open (High resistance)

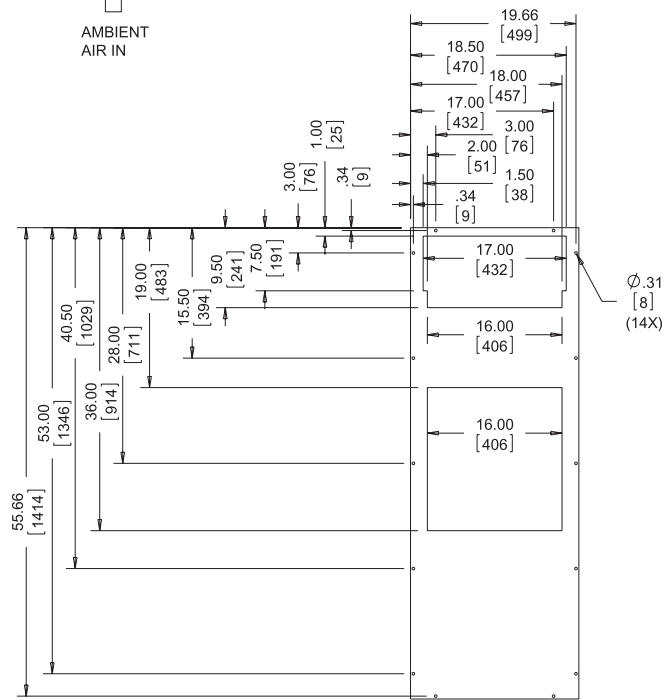
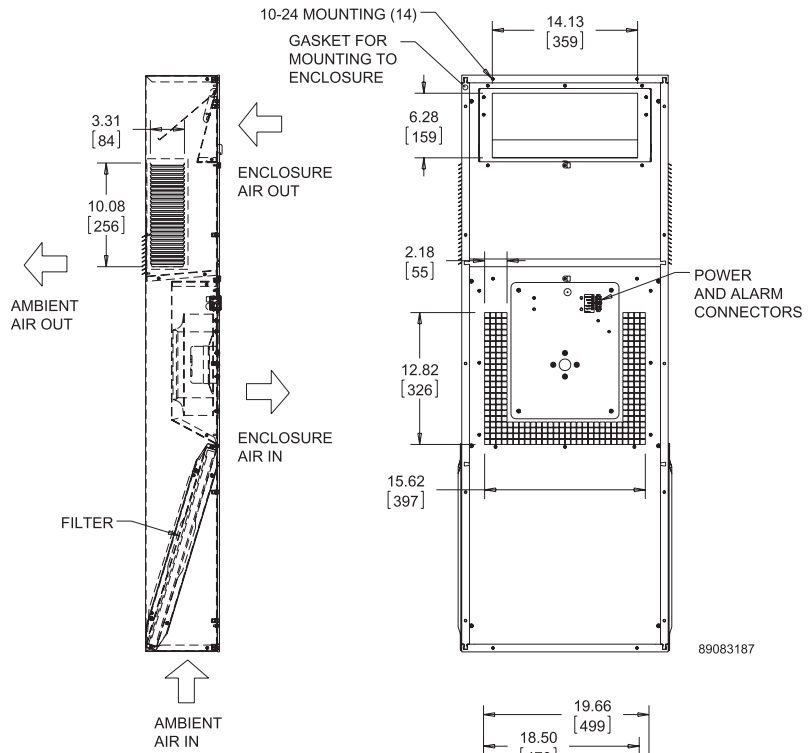
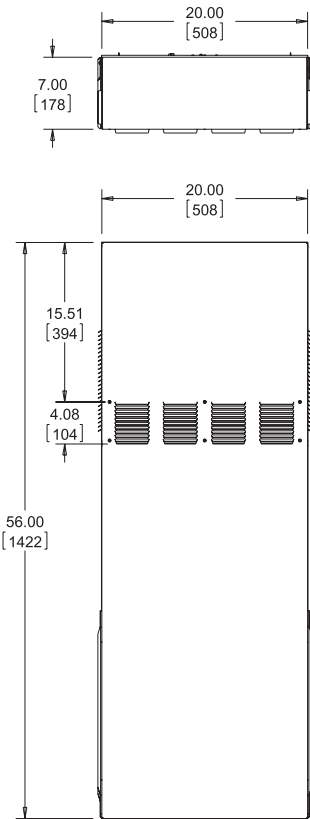
DETAIL DRAWINGS

DCG2904248100



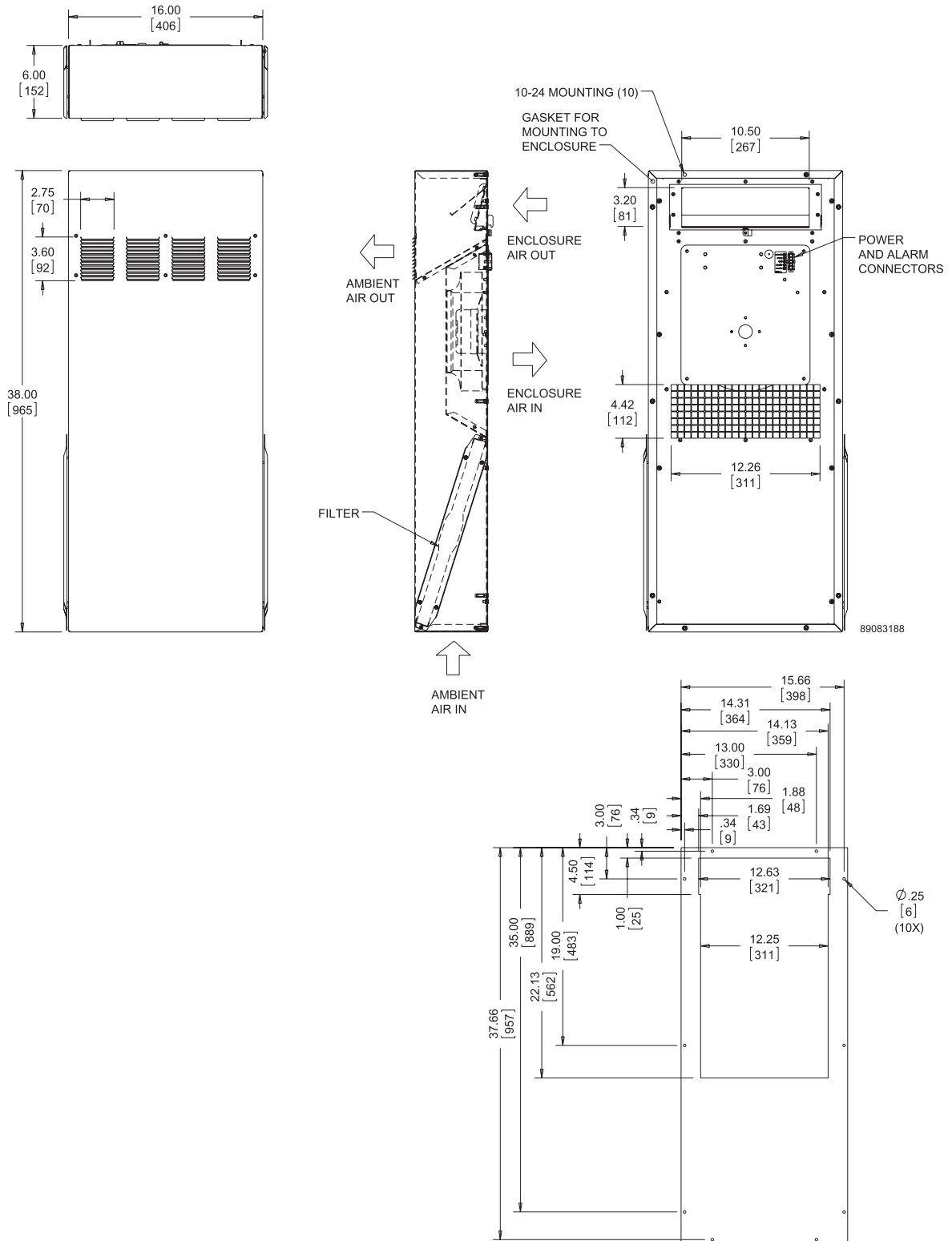
CUTOUT DIMENSIONS

DCT5615048100



CUTOUT DIMENSIONS

DCT3809448100



CUTOUT DIMENSIONS

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