



HexFlow® Series

Product User Manual



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INTRODUCTION

This is the service manual for Dantherm Cooling HexFlow Series units. Please see the table of contents below for further information about the sections of this manual.

TARGET GROUP

The target group for this service manual are the technicians who install and maintain the HexFlow Series units, as well as the users of the unit.

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RESERVATIONS

Dantherm Cooling reserves the right to make changes and improvements to the product and the service manual at any time without prior notice or obligation.

TABLE OF CONTENTS

UNPACKING SAFETY WARNING	3
MODEL IDENTIFICATION OPTIONS	4
MODEL OVERVIEW	5
PRODUCT DESCRIPTION	6-7
INSTALLATION OPERATION.....	8-11
WIRING DIAGRAMS	12-14
UNIT OVERVIEW.....	15-30
HF 17.....	15-16
HF 17SQ.....	17-18
HF 22.....	19-20
HF 26.....	21-22
HF 35.....	23-24
HF 55.....	25-26
HF 100.....	27-28
HF 200.....	29-30
MAINTENANCE SPARE PARTS	31
WARRANTY	32
RMA DECLARATION OF CONFORMITY.....	33

UNPACKING, HANDLING, AND INSPECTION

Thank you for purchasing a Dantherm Cooling Hexflow heat exchanger. Please carefully review all handling and installation instructions.

- The heat exchanger should be inspected on initial delivery and any damage to packaging should be noted.
- The unit should be maintained in the upright position at all times.
- Special consideration should be given to correctness of external packing damage or abrasion, loose components and surface marks.
- Any damage should be added to the freight bill and immediately notify the freight company for filing a freight claim.
- All packing materials should be retained for inspection.

Do not attempt to operate the unit if it appears to be damaged.

GENERAL SAFETY

Certain parts of electrical systems are inevitably live or have a high operating temperature. Observe caution at all times.

- Failure to observe these conditions and installation instructions can cause injury and damage.
- The system is to be installed and maintained only by trained and qualified personnel.
- Do not apply power until all ground connections have been made.
- The unit is fitted with pressed and folded metal parts, which could have sheared metal edges. Be cautious handling the unit, especially when working in poorly accessible places.
- Check that no tools, test equipment, torches etc. have been left in or on the equipment on completion of work.
- Ensure the cover(s) and all mounting hardware are firmly secured before leaving installation.

- All cable and connectors must conform to UL standards.

The heat exchanger is UL recognized and tested to UL1995. It will comply where necessary with the safety requirements as defined in UL1995.

WARNINGS

INTRODUCTION: This installation manual and the product uses various displays and labels to ensure safe use. Ignoring these displays and labels and incorrectly using the product could have results as classified below. Please read the following warning symbol information before reading the rest of this section, and be sure to strictly observe all instructions.

GENERAL PRECAUTION: This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance. If the power cord is damaged, it must be replaced by the manufacturer, a service agent, or a similar qualified person in order to avoid a hazard.

 **WARNING:** Not following these instructions could result in death or serious injury.

 **CAUTION:** Not following these instructions could result in injury or property damage.

 This symbol will show for something that should NOT be done.

Project safety is your responsibility! Follow the instructions in this manual regarding the installation method and installation orientation. Not following these instructions could result in injury, death, or damage to equipment. All work should be performed by qualified personnel using safe work practices. All proper protective equipment should be used. PPE required may include, but is not limited to: Safety glasses | Hard hat | Safety shoe | Hearing protection | Cut resistant gloves | Face shield | Proper work attire (long sleeve shirt and long pants)

MODEL IDENTIFICATION

HF-45-230-T1

CAPACITY

17 - 17 W/°F
22 - 22 W/°F0
26 - 26 W/°F
35 - 35 W/°F
45 - 45 W/°F
55 - 55 W/°F
100 - 100 W/°F
200 - 200 W/°F

VOLTAGE

115 - 115 volt / single phase
230 - 230 volt / single phase
24 - 24 VDC
48 - 48 VDC

OPTIONS

L - EXTERNAL PLUG
M - STAINLESS STEEL COVER
PXX - NON STANDARD PAINT COLOR
S - SPEED CONTROLLER
T1 - EXTERNAL FAN THERMOSTAT

Note: Legacy model number nomenclature contained the following elements (for reference only):

“P” - Pinnacle Series HexFlow

“S” - Standard Unit Type

“OXX” - Designated Nominal Height

Example Model Number: P-S-035-045-230-T1

OPTIONS

Speed Control (-S)

The controller is designed to slow down the speed of the internal and external fans at lower temperatures to reduce noise and energy consumption. It will also supply either a normally closed (NC) or normally open (NO) alarm signal for fan fault, sensor fault, or high temperature.

Thermostat Control (-T1)

A snap disc thermostat controls the operation of the external loop fan. A temperature rise above 80°F will cause the fan to be turned on, a temperature decrease below 60°F will cause the fan to be turned off; between the range of 60°F-80°F the fan will be operating based on the previous environmental condition experienced.

MODEL OVERVIEW							
HF	WATTS/°F	VOLTAGE	HZ	PH	FULL LOAD, AMPS	MINIMUM BREAKER/ FUSE SIZE, AMPS	WEIGHT LBS [KG]
HF-17-115	17	115 VAC	50-60	1	0.5	0.7	21 [9.5]
HF-17-230	17	230 VAC	50-60	1	0.3	0.4	21 [9.5]
HF-17-24	17	24V DC	--	--	3.5	4.4	21 [9.5]
HF-17-48	17	48V DC	--	--	1.75	2.25	21 [9.5]
HF-22-115	22	115 VAC	50-60	1	0.5	0.7	23 [10.4]
HF-22-230	22	230 VAC	50-60	1	0.3	0.4	23 [10.4]
HF-22-24	22	24V DC	--	--	3.5	4.4	23 [10.4]
HF-22-48	22	48V DC	--	--	1.75	2.25	23 [10.4]
HF-26-48	26	48V DC	--	--	1.75	2.25	36 [16]
HF-35-115	35	115 VAC	50-60	1	3.4	6	59 [27]
HF-35-230	35	230 VAC	50-60	1	0.86	2.5	59 [27]
HF-35-48	35	48V DC	--	--	4.3	6	59 [27]
HF-45-115	45	115 VAC	50-60	1	3.4	5	64 [29]
HF-45-230	45	230 VAC	50-60	1	1.86	2.5	64 [29]
HF-45-48	45	48V DC	--	--	4.3	6	60 [27]
HF-55-115	55	115VAC	50-60	1	3.4	5	72 [33]
HF-55-230	55	230 VAC	50-60	1	1.86	2.5	72 [33]
HF-55-24	55	24V DC	--	--	10.0	12.5	68 [31]
HF-55-48	55	48V DC	--	--	4.3	6	68 [31]
HF-100-230	100	230 VAC	50-60	1	1	1.5	135 [62]
HF-200-460/3	200	460/3 VAC	50-60	3	4	6	250 [113]

Note: The information provided above is a general overview for reference only. The customer is responsible for the correct installation and application of each product.

As products and features change, the nameplate on the side of the unit should be referred to for correct voltage / current during installation.

PRODUCT DESCRIPTION

The Hexflow series is designed to control the internal temperature of an enclosure by removing dissipated heat from inside the structure and is designed to maintain accurate temperatures for electronic equipment.

IMPORTANT

Dantherm Cooling Inc. recommends that the cooling system should run continuously.

FUNCTIONALITY

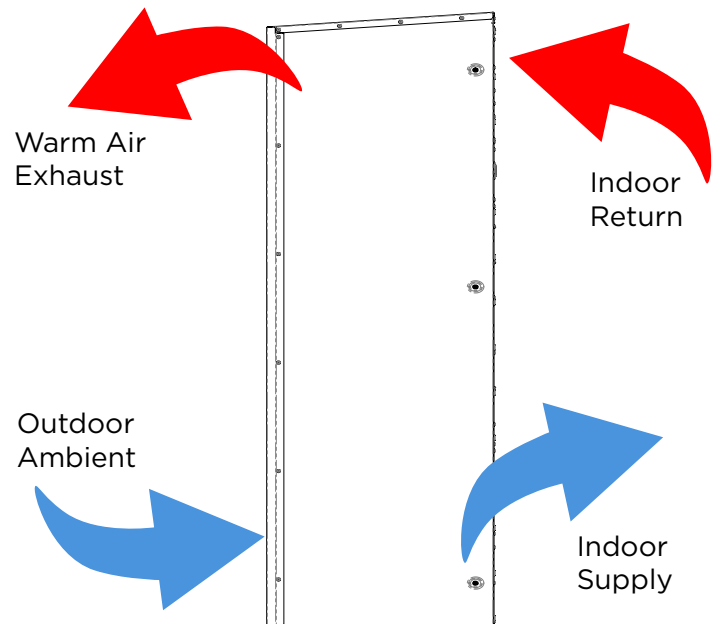
The illustration to the right shows the airflow of the air conditioner. The two air flows (internal/external) operate separately. External air is only used to cool down the condenser which dissipates the heat absorbed by the indoor evaporator. The air flows are not mixed.

INTERNAL AIR FLOW

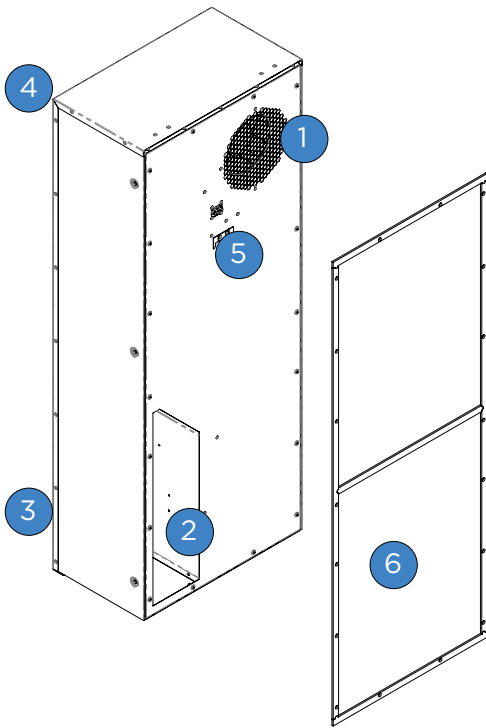
Warm, internal air is drawn into the unit by the internal evaporator fan. The air is then pushed through the evaporator, and then released into the enclosure through the evaporator opening.

EXTERNAL AIR FLOW

Cold, external air is drawn into the unit by the condenser fan, and then routed through the condenser, where it is cooled. After passing through the condenser, the air is returned to the external environment.

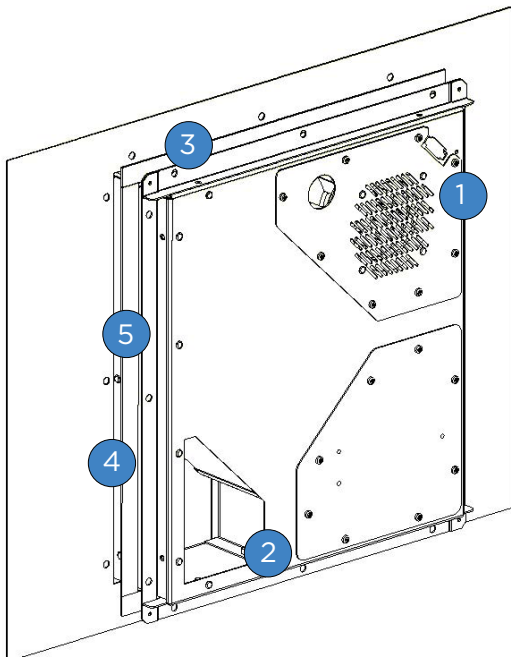


PRODUCT DESCRIPTION



VIEW 1

PART	DESCRIPTION
1	Cabinet Air IN
2	Cabinet Air Out
3	Ambient Air IN
4	Ambient Air Out
5	Mounting Hook
6	Installation Gasket



VIEW 2

PART	DESCRIPTION
1	Cabinet Air IN
2	Cabinet Air OUT
3	Installation Gasket
4	Mounting Face
5	Mounting Flange

INSTALLATION

Please strictly observe the following:

Special skills are required to install Dantherm products. Non-qualified personnel should not attempt any of the actions shown in this installation guide. Dantherm shall not be responsible for improper installation or any accidents, damages, or injury resulting from improper installation.

These units are designed to be mounted outdoor, flush to the wall. Any other installation method is not recommended.

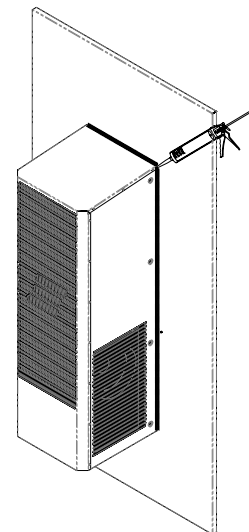
WARNING

Never carry out any installation, maintenance or service, without disconnecting the power supply.

INSTALLATION AND OPERATION

Any installation should allow good airflow inside the enclosure.

- The enclosure shall be checked for correctness of cutouts, mounting holes and electrical supply.
- The Mounting Hook is preset to match the recommended cutout openings. If an adjustment other than factory setting of the hook needs to be made, do so prior to fixing the gasket to the heat hanger.
- Install the gaskets as shown in section 5.1. A gasket kit is provided with each unit.
- Remove the outer cover of the Heat Exchanger by removing the screws from either the side or bottom of the unit. Depending on options selected, use a #2 Phillips Screwdriver, #20 Torx Driver or #15 Security Torx with Pin Driver. All screw threads are M4.
- Utilize an appropriate and safe lifting device.
- Mount the Heat Exchanger to the cabinet by using the mounting hook, which supports the weight of the unit. The hook grabs the cutout opening on the cabinet panel.
- Install the mounting hardware as supplied with the unit (M6x25 SCKT HD cap screws & washers). The fixings are installed from inside the cabinet into the threaded inserts located in the unit. Use 4mm allen wrench/driver.
- For Mid Mount units, place the unit for the inside of shelter through cutout opening using an appropriate and safe lifting device.
- Connect the Heat Exchanger power lead to the main supply located in the cabinet/enclosure. Refer to product label on the bottom right hand side panel of unit for the proper voltage/amp requirement.
- Make sure a properly grounded power supply is used. All installations are to be completed in accordance with local NEC codes and guidelines.
- The electrical circuit should be protected by a slow blow breaker or fuse. Refer to the model overview in this manual for fuse/breaker rating.
- After final installation and power supply connection, the unit should be powered and checked for correct airflow.
- For models containing speed control option, push and hold test button located on control board for five seconds to activate the self test.
- Check to correct airflow and fan speeds.
- Please contact Dantherm for more information if required.



ELECTRICAL REQUIREMENTS

Please incorporate the following imperative requirements when installing the electrical connections:

WARNING

Any installation should always be in accordance with national wiring regulations, DC / AC external supply should be protected, with an external disconnecting device that has a contact separation of at least 3 mm. This external DC / AC supply must also be over current protected. These disconnecting devices, must always be labeled, with rated voltage as well as rated current.

- The units earth connections must always be connected to the enclosures ground.
- All cables, in a permanent installation, are imperative to install and secure properly to prevent any damage to equipment and/or humans. Secure all cables with cable ties or appropriate cable fasteners, made for this purpose.

ELECTRICAL CONNECTIONS

After successful unit installation, the electrical connections will be completed, after following the below requirements:

WARNING

1. The power and/or additional connections need to be routed, secured and connected to appropriate sources. The PrecisionAir unit is either delivered with:
 - 10ft. cable with stripped wires are to be connected inside a distribution board. Refer to wiring diagrams for connections.
 - Unit types with extension “-L” on the label are delivered with a factory fitted plug, that should be connected to the fused power.
 - -48 DCV units are supplied with a harness that should be connected to the fused power.
2. Connect the PrecisionAir units ground terminal to enclosure grounding.
3. All power supply connections are to be secured with an external disconnection device, as well as over current protected.
4. Connect any needed accessories.

ELECTRONIC CONTROL DESCRIPTION

This section describes key features of the optional HX2 controller, and how it operates.

WARNING

Never carry out any installation, maintenance or service, without disconnecting the power supply.

EMBEDDED CONTROLLER

The built in all in one controller, controls the unit in the most efficient way. Basic parameters can be set via on board control panel, from inside the enclosure. Extended parameter settings, as well as, logging of operation data, is possible through the SD card interface.

CONTROL STRATEGY

The controller regulates the fans heater, and cooling based on desired set points.

- When operating, the evaporator fans will circulate the indoor air continually.
- When temperature in the enclosure is higher than set-point the compressor will start, which initiates cooling.
- The compressor will stop once set-point and hysteresis is achieved.
- A high temperature alarm (when temp is higher than 50° C) will initiate an alarm on the alarm output.
- Low temperature alarm (when temp is lower than 1° C) will initiate an alarm on the alarm output.
- The condenser fan operates only when the actual temperature on the condenser surface requires this operation.

TEST BUTTON

A test button is on board the controller to allow the user to initiate the following test sequence:

STEP	INT. FAN	EXT. FAN	ALARM	LED	DURATION
1	0%	0%	Activated	Continuous	30 sec.
2	50% (r1)	0%	Activated	Flashing	30 sec.
3	50% (r1)	50% (R1)	Activated	Flashing	30 sec.
4	100% (r2)	50% (R1)	Activated	Flashing	30 sec.
5	100% (r2)	100% (R2)	Activated	Flashing	30 sec.
6	0%	0%	Normal	Normal	15 sec.

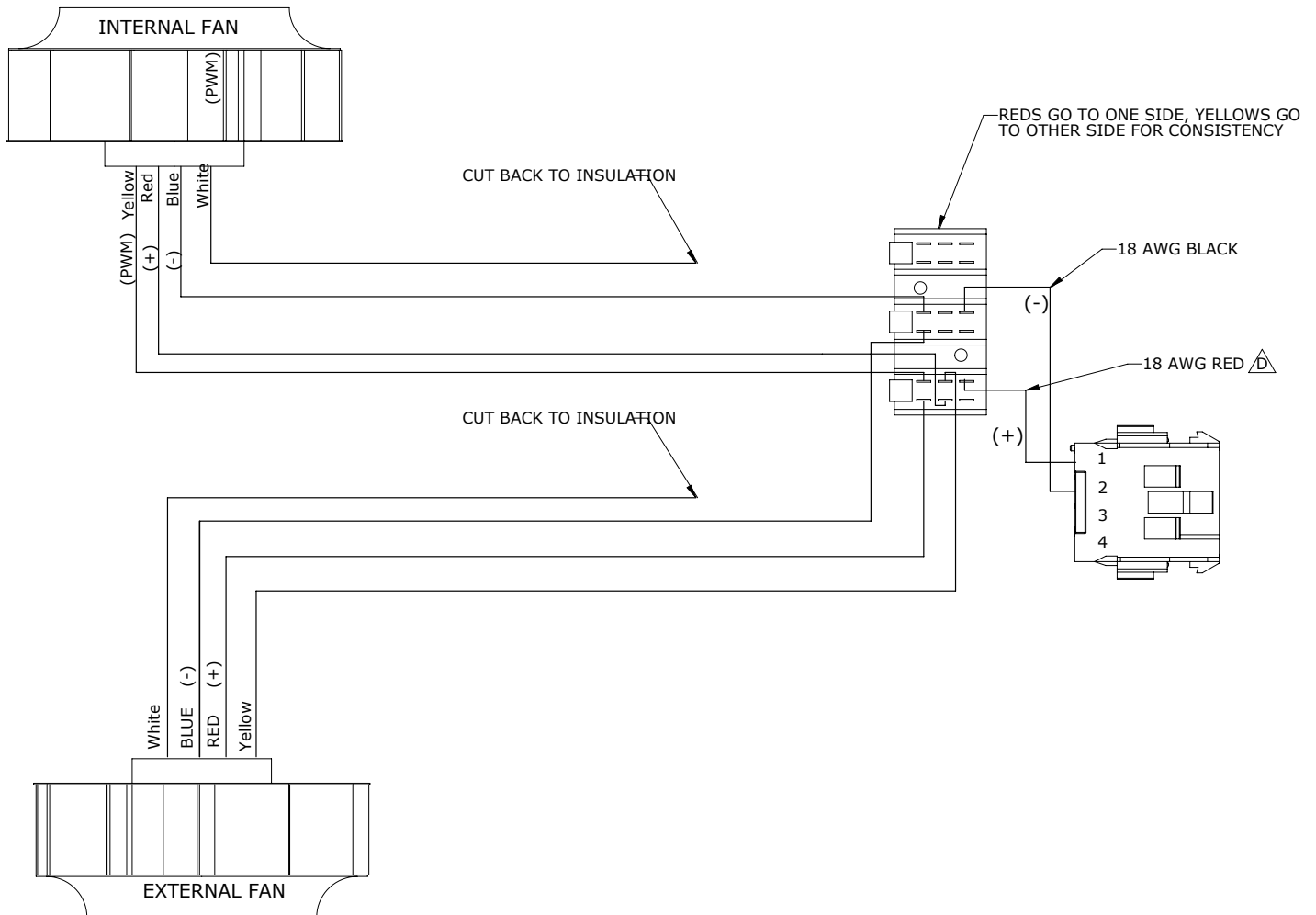
TROUBLE SHOOTING GUIDE

PROBLEM		SOULTION
During initial installation, neither fan turns on and no LEDs are display		Try reversing the wiring. Reverse protection is provided to prevent damage to the controller. When plugged in “backwards” the controller will not function.
During initial installation, the internal fan is on, but the external fan is not		The external fan will not function until the “T1” setting is exceeded. By default, this is 30°C.
Fan does not go to full speed		Check temperature, check jumper JP1 is selected to 1 and 2.
The red LED is flashing		A sensor fault has occured. The fans should operate at full speed until this is corrected. Check the sensor or cabinet temperature.
The red LED is solid		A fan fault has occured. Check the fan wiring or the fan.

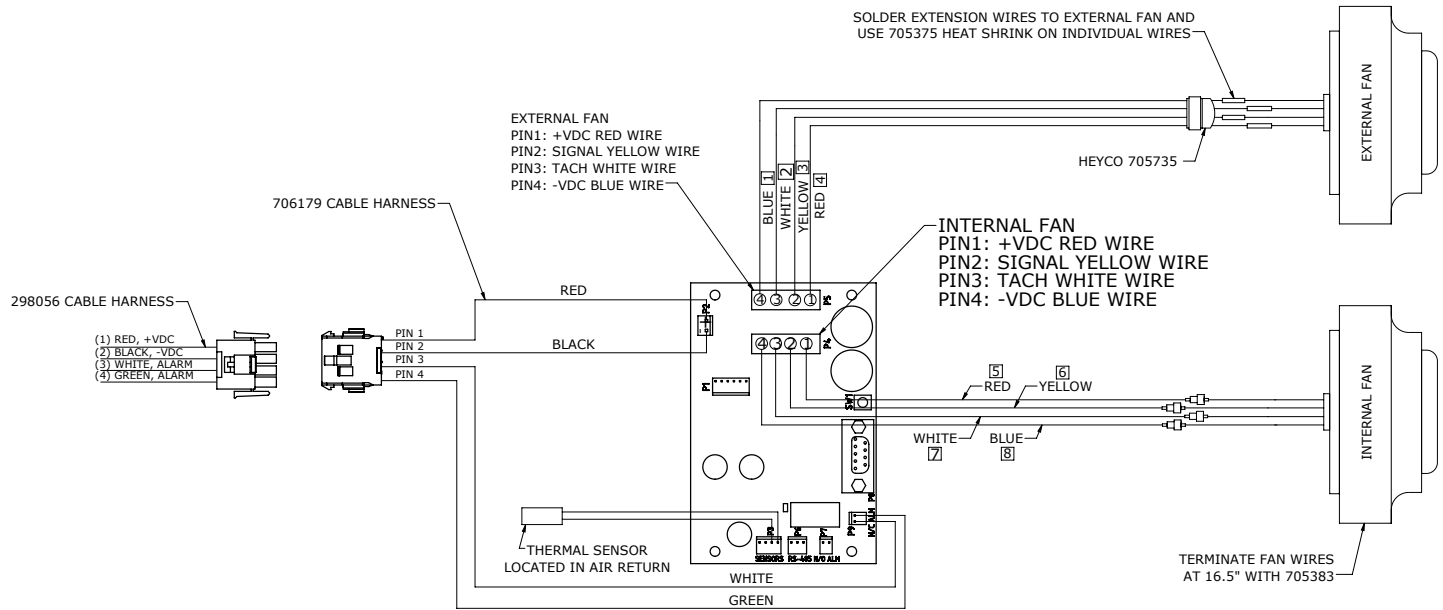
The following schematics are of standard products only. Wiring schematics for options or custom products are available directly from Dantherm Cooling.

Wiring diagram for the T1 option of the PS023011A/B power supply. The diagram shows the connection of an internal fan, an external fan, and a terminal block to a main power source. Key components include capacitors, piggyback terminals, and a 3-way splice. The main power source is labeled "MAIN POWER E000012 (705358)" with (+) BLACK and (-) WHITE lines. The terminal block is labeled "TERMINAL BLOCK (PS023011A / B USE 2-ROW TERMINAL BLOCK)" with terminals B1, B2, and B3. The internal fan is labeled "INTERNAL FAN" and the external fan is labeled "EXTERNAL FAN". The diagram also shows a "GROUND STUD" and "GROUND" connections. A note at the bottom left states "FOR MODELS WITH CAPACITOR 012440 OR SIMILAR".

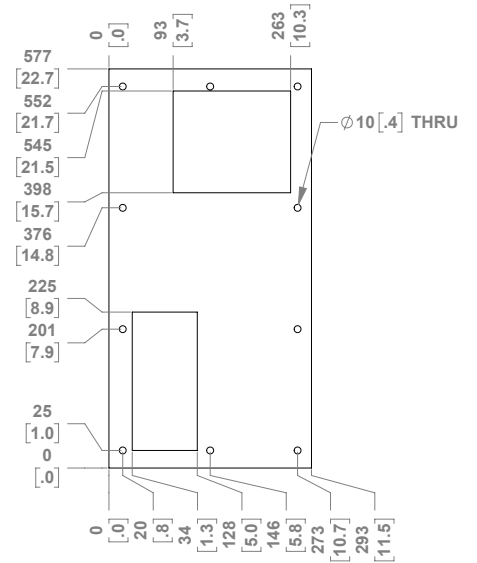
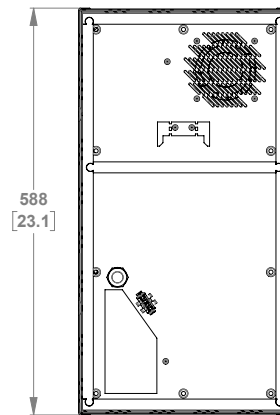
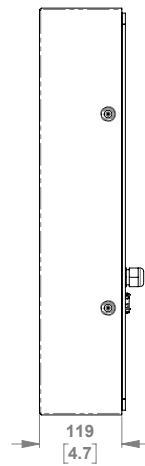
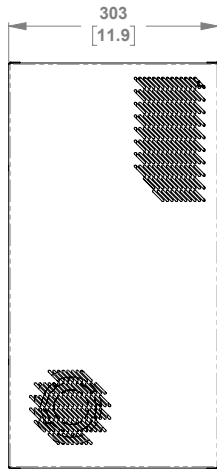
24, 48 VDC: WITHOUT SPEED CONTROL



24, 48 VDC WITH SPEED CONTROL



HexFlow® 17

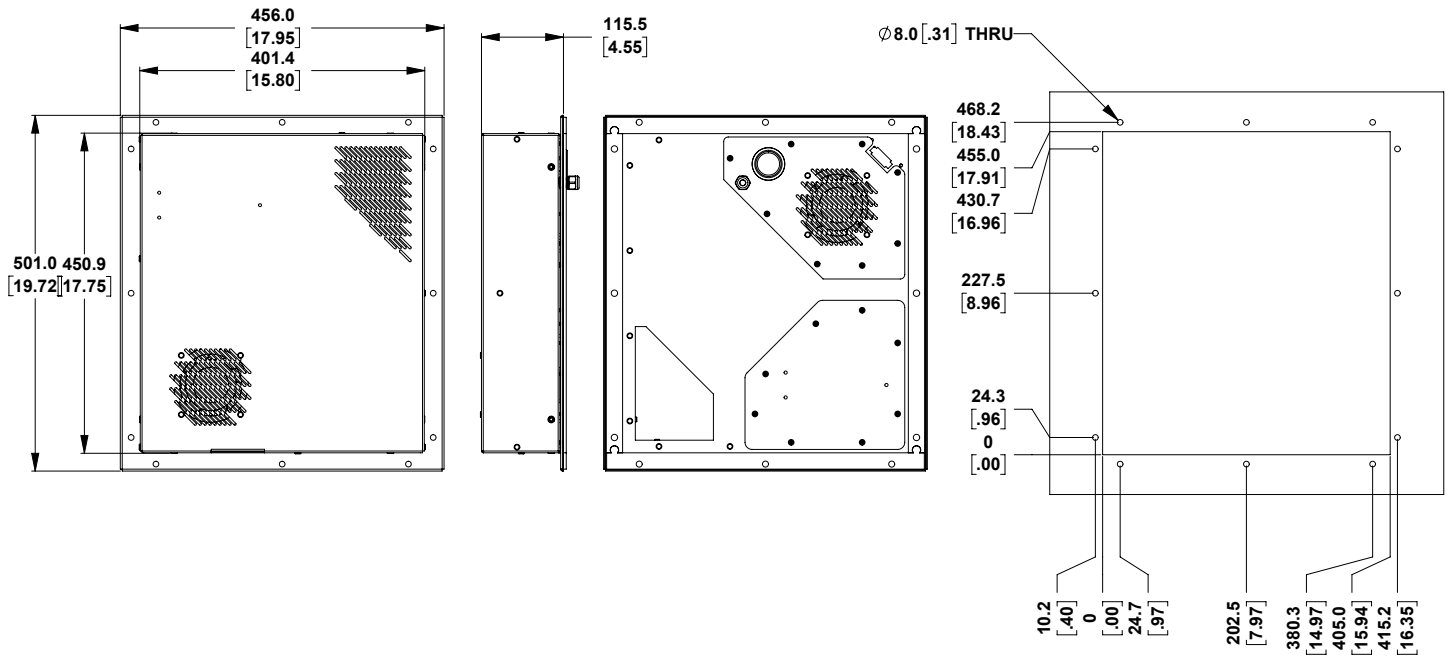


NOTES:
1) UNITS = MM [IN]
2) STEP FILES AVAILABLE ON REQUEST

HexFlow® 17

	UNITS				
MODEL NUMBER	--	HF-17-115	HF-17-230	HF-17-24	HF-17-48
MOUNTING TYPE	--	Outdoor			
UNIT DIMENSIONS [HxWxD]	Inches [mm]	23x12x4.7 [584.2x304.8x170]			
WEIGHT	Lbs [kg]	21 [9.5]			
COOLING CAPACITY 131°F INTERNAL / 131°F AMBIENT	W/°F [W/°C]	17 [30]			
OPERATIONAL TEMPERATURE RANGE	°F [°C]	-40 to 149 [-40 to 65]			
NOISE 1.5M DISTANCE	dB	65			
INPUT VOLTAGE	Volts	120 VAC	240 VAC	24V DC	48V DC
CURRENT	Amps	0.5	0.3	1.75	2.3
APPROVALS	--	SA12349 (UL)			
CONSTRUCTION	--	Aluzink Steel, Stainless Optional Textured Powder Coat, Color Options Available			

HexFlow® 17SQ



NOTES:

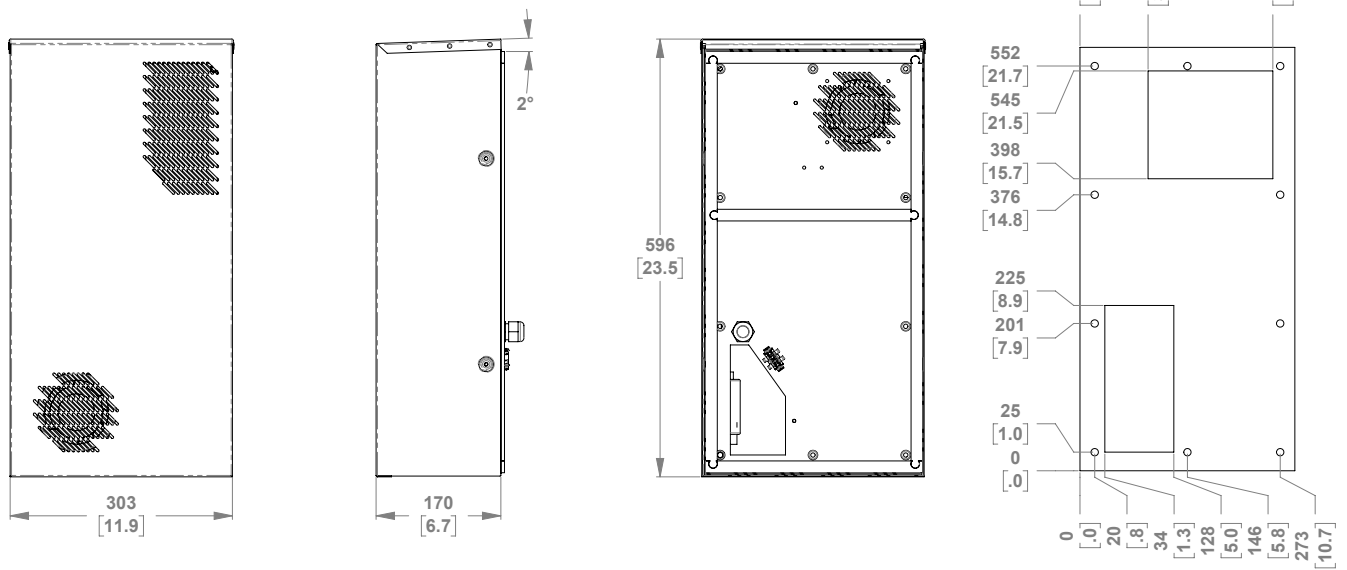
- 1) UNITS = MM [IN]
- 2) STEP FILES AVAILABLE ON REQUEST

HexFlow® 17SQ

**Also available in Surface Mount*

	UNITS				
MODEL NUMBER	--	HF-17-115-SQ	HF-17-230-SQ	HF-17-24-SQ	HF-17-48-SQ
MOUNTING TYPE	--	Outdoor			
UNIT DIMENSIONS [HxWxD]	Inches [mm]	48.5x19.5x14.4 [457.2x406.4x114.3]			
WEIGHT	Lbs [kg]	21 [9.5]			
COOLING CAPACITY 131°F INTERNAL / 131°F AMBIENT	W/°F [W/°C]	17 [30]			
OPERATIONAL TEMPERATURE RANGE	°F [°C]	-40 to 149 [-40 to 65]			
NOISE 1.5M DISTANCE	dB	65			
INPUT VOLTAGE	Volts	120 VAC	240 VAC	24V DC	48V DC
CURRENT	Amps	0.5	0.3	1.75	2.3
APPROVALS	--	SA12349 (UL)			
CONSTRUCTION	--	Aluzink Steel, Stainless Optional Textured Powder Coat, Color Options Available			

HexFlow® 22

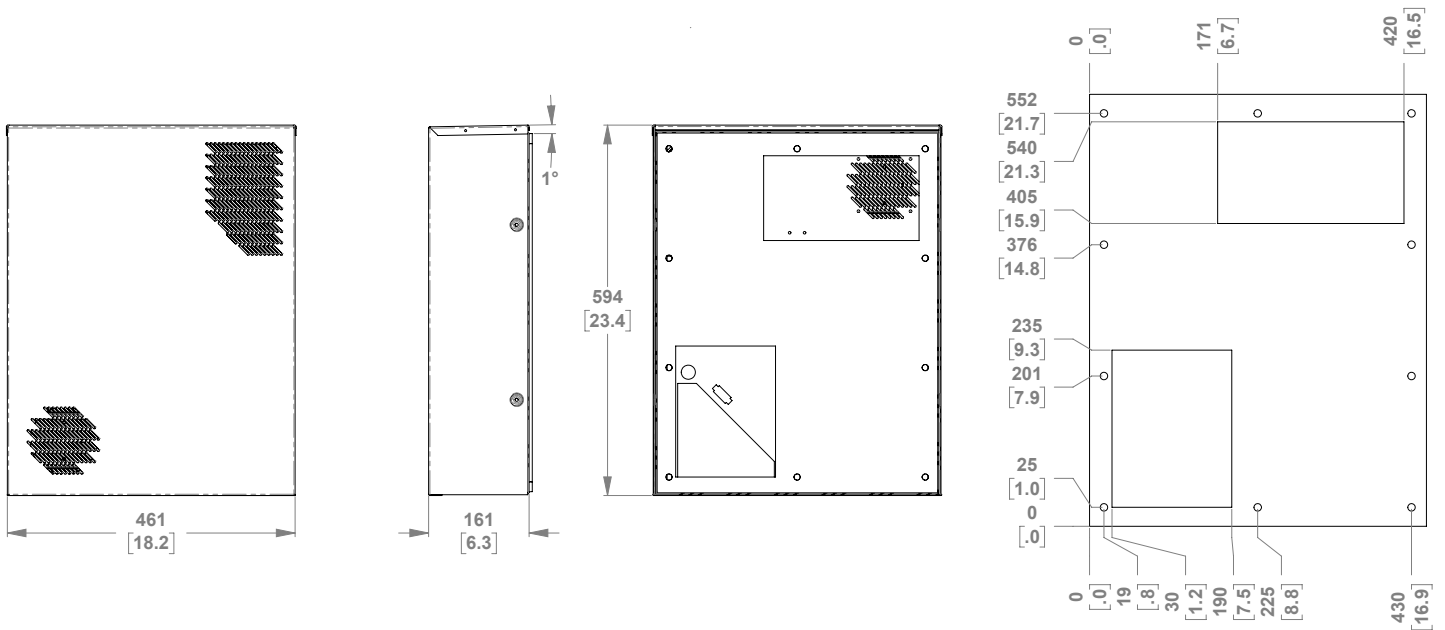


NOTES:
 1) UNITS = MM [IN]
 2) STEP FILES AVAILABLE ON REQUEST

HexFlow® 22

	UNITS				
MODEL NUMBER	--	HF-22-115	HF-22-230	HF-22-24	HF-22-48
MOUNTING TYPE	--	Outdoor			
UNIT DIMENSIONS [HxWxD]	Inches [mm]	23x12x7 [584.2x304.8x177.8]			
WEIGHT	Lbs [kg]	23 [10.5]			
COOLING CAPACITY 131°F INTERNAL / 131°F AMBIENT	W/°F [W/°C]	22 [40]			
OPERATIONAL TEMPERATURE RANGE	°F [°C]	-40 to 149 [-40 to 65]			
NOISE 1.5M DISTANCE	dB	65			
INPUT VOLTAGE	Volts	120 VAC	240 VAC	24V DC	48V DC
CURRENT	Amps	0.5	0.3	1.75	2.3
APPROVALS	--	SA12349 (UL)			
CONSTRUCTION	--	Aluzink Steel, Stainless Optional Textured Powder Coat, Color Options Available			

HexFlow® 26



NOTES:

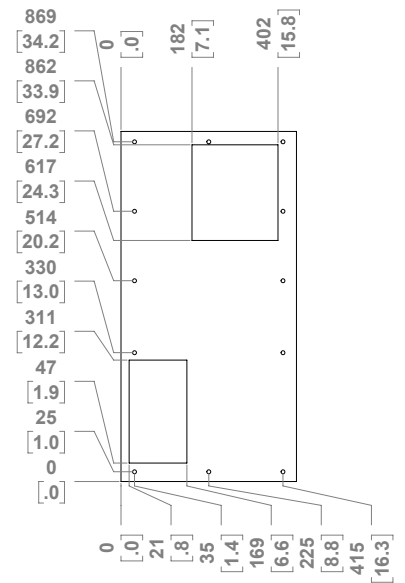
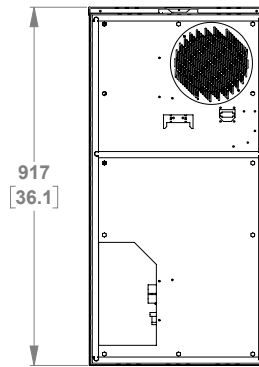
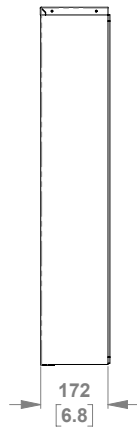
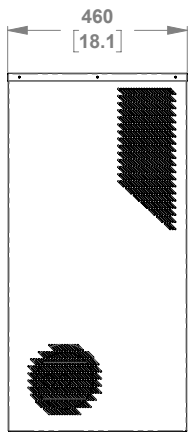
- 1) UNITS = MM [IN]
- 2) STEP FILES AVAILABLE ON REQUEST

HexFlow® 26

*NEMA 4 Option Available

	UNITS				
MODEL NUMBER	--	HF-26-115	HF-26-230	HF-26-24	HF-26-48
MOUNTING TYPE	--	Outdoor			
UNIT DIMENSIONS [HxWxD]	Inches [mm]	23x12x7 [584.2x304.8x177.8] 24.4x18.3x10 [616x465x255] NEMA			
WEIGHT	Lbs [kg]	23 [10.5]			
COOLING CAPACITY 131°F INTERNAL / 131°F AMBIENT	W/°F [W/°C]	22 [40]			
OPERATIONAL TEMPERATURE RANGE	°F [°C]	-40 to 149 [-40 to 65]			
NOISE 1.5M DISTANCE	dB	65			
INPUT VOLTAGE	Volts	120 VAC	240 VAC	24V DC	48V DC
CURRENT	Amps	0.5	0.3	1.75	2.3
APPROVALS	--	SA12349 (UL)			
CONSTRUCTION	--	Aluzink Steel, Stainless Optional Textured Powder Coat, Color Options Available			
SUBMERSION RATING	--	NEMA 4 Optional Add N4 To End of Model Number			

HexFlow® 35



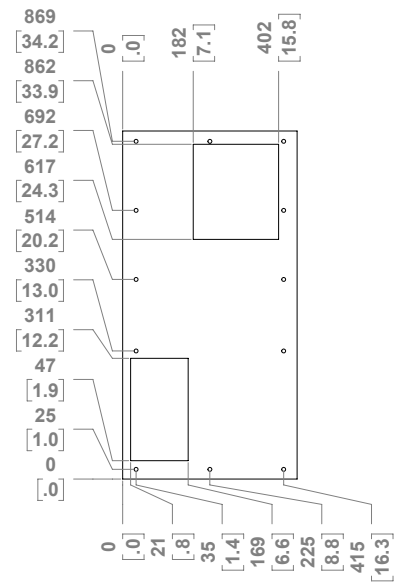
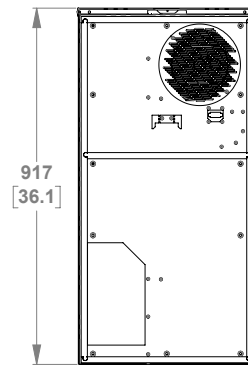
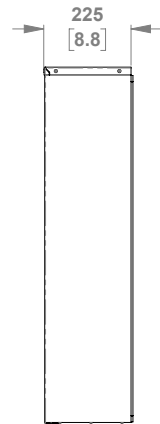
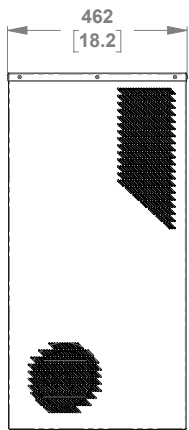
NOTES:

- 1) UNITS = MM [IN]
- 2) STEP FILES AVAILABLE ON REQUEST

HexFlow® 35

	UNITS				
MODEL NUMBER	--	HF-35-115	HF-35-230	HF-35-24	HF-35-48
MOUNTING TYPE	--	Outdoor			
UNIT DIMENSIONS [HxWxD]	Inches [mm]	36x18x6.8 [914.4x457.2x172.72]			
WEIGHT	Lbs [kg]	59 [26.8]			
COOLING CAPACITY 131°F INTERNAL / 131°F AMBIENT	W/°F [W/°C]	35 [65]			
OPERATIONAL TEMPERATURE RANGE	°F [°C]	-40 to 140 [-40 to 60]			
NOISE 1.5M DISTANCE	dB	66		72	
INPUT VOLTAGE	Volts	115 VAC	230 VAC	24V DC	48V DC
CURRENT	Amps	3.4	.86	8.0	3.96
APPROVALS	--	SA12349 (UL)			
CONSTRUCTION	--	Aluzink Steel, Stainless Optional Textured Powder Coat, Color Options Available			

HexFlow® 55



NOTES:

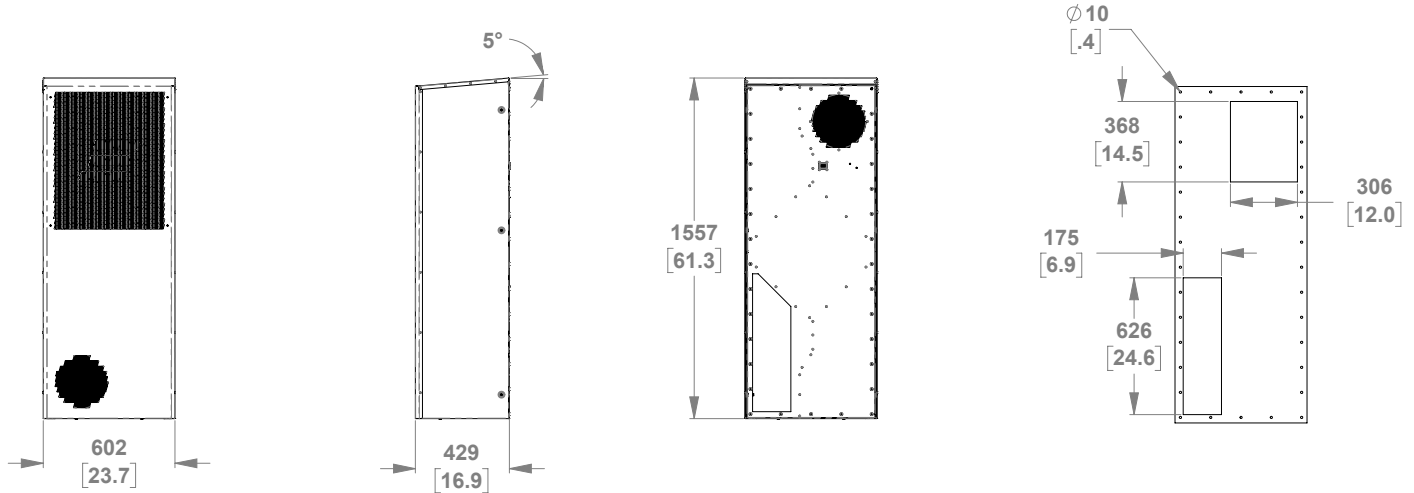
1) UNITS = MM [IN]

2) STEP FILES AVAILABLE ON REQUEST

HexFlow® 55

	UNITS				
MODEL NUMBER	--	HF-55-115	HF-55-230	HF-55-24	HF-55-48
MOUNTING TYPE	--	Outdoor			
UNIT DIMENSIONS [HxWxD]	Inches [mm]	36x18x8.8 [914.4x457.2x223.52]			
WEIGHT	Lbs [kg]	70 [31.8]			
COOLING CAPACITY 131°F INTERNAL / 131°F AMBIENT	W/°F [W/°C]	55 [99]			
OPERATIONAL TEMPERATURE RANGE	°F [°C]	-40 to 140 [-40 to 60]			
NOISE 1.5M DISTANCE	dB	72			
INPUT VOLTAGE	Volts	115 VAC	230 VAC	24V DC	48V DC
CURRENT	Amps	3.4	1.86	8.6	4.3
APPROVALS	--	SA12349 (UL)			
CONSTRUCTION	--	Aluzink Steel, Stainless Optional Textured Powder Coat, Color Options Available			

HexFlow® 100



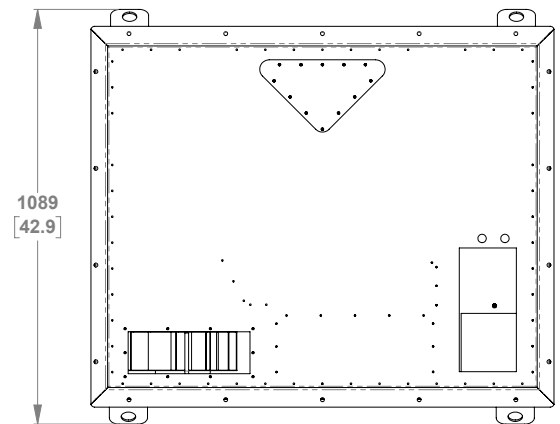
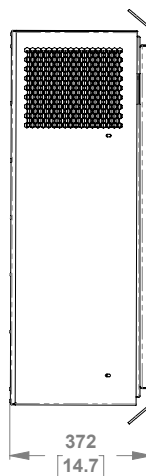
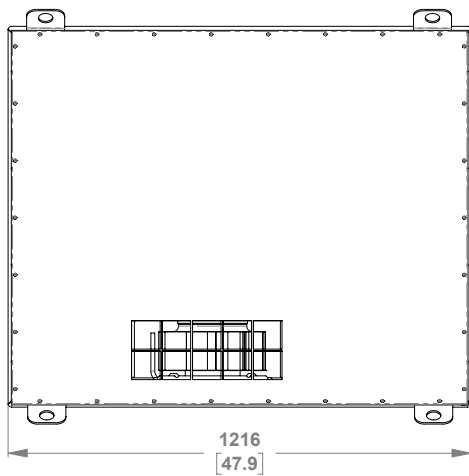
NOTES:

- 1) UNITS = MM [IN]
- 2) STEP FILES AVAILABLE ON REQUEST

HexFlow® 100

	UNITS		
MODEL NUMBER	--	HF-100-230	HF-100-48
MOUNTING TYPE	--	Outdoor	
UNIT DIMENSIONS [HxWxD]	Inches [mm]	60x24x14 [1524x609.6x355.6]	
WEIGHT	Lbs [kg]	135 [61.4]	
COOLING CAPACITY 131°F INTERNAL / 131°F AMBIENT	W/°F [W/°C]	100 [180]	
OPERATIONAL TEMPERATURE RANGE	°F [°C]	-40 to 149 [-40 to 65]	
NOISE 1.5M DISTANCE	dB	69	
INPUT VOLTAGE	Volts	230 VAC	48V DC
CURRENT	Amps	1.0	5.0
APPROVALS	--	SA12349 (UL)	
CONSTRUCTION	--	Aluzink Steel, Stainless Optional Textured Powder Coat, Color Options Available	

HexFlow® 200



NOTES:

- 1) UNITS = MM [IN]
- 2) STEP FILES AVAILABLE ON REQUEST

HexFlow® 200

	UNITS	
MODEL NUMBER	--	HF-200-460/3
MOUNTING TYPE	--	Roof Top
UNIT DIMENSIONS [HxWxD]	Inches [mm]	14.2x47x38.6 [361x1195x980]
WEIGHT	Lbs [kg]	250 [113]
COOLING CAPACITY 131°F INTERNAL / 131°F AMBIENT	W/°F [W/°C]	200 [360]
OPERATIONAL TEMPERATURE RANGE	°F [°C]	-40 to 149 [-40 to 65]
NOISE 1.5M DISTANCE	dB	81
INPUT VOLTAGE	Volts	460/3 VAC
CURRENT	Amps	4.0
APPROVALS	--	SA12349 (UL)
CONSTRUCTION	--	Aluzink Steel, Stainless Optional Textured Powder Coat, Color Options Available

PREVENTATIVE MAINTENANCE

Preventative maintenance must be completed in order to:

- Continue operation in specified range
- Avoid malfunctions
- Avoid inefficient operation
- Maximize the unit's lifetime

The Heat Exchanger should be examined periodically to determine the required cleaning periods based on the installed environmental conditions. Annual inspections are most typical and will cover the majority of installed locations. The factory warranty is only valid if documented preventative maintenance has been carried out, with a time interval of:

- Maximum six months when unit is located in normal air quality environment.
- Maximum two months when unit is located in bad air quality environment.

A written log at site is adequate documentation for preventative maintenance.

CAUTION

Always disconnect power to Heat Exchanger prior to servicing. Schedule maintenance includes cleaning of fans and Heat Exchanger core as they become contaminated with dust and/or residue.

The fans and Heat Exchanger core should be cleaned using a soft bristle brush to remove dust or debris. Water is NOT recommended. Reconnect power after service.

SPARE PARTS

A number of spare and replacement parts are available from Dantherm Cooling. Please contact technical support for more information at: tech.support@danthermcooling.com.

WARRANTY:

DANTHERM COOLING, INC., HEAT EXCHANGERS AND AIR CONDITIONING UNITS HAVE LIMITED WARRANTY.

DANTHERM COOLING, INC. limited warranty extends to the original purchaser only of any DANTHERM COOLING heat exchanger and air conditioning unit, and to no other person or entity. DANTHERM COOLING warrants that such DANTHERM COOLING products will be free from defects in materials and workmanship in normal use for a period of twelve (12) months from the date of the original purchase. Should any part of your DANTHERM COOLING product fail because of a manufacturing defect within such twelve (12) month period, DANTHERM COOLING terms are set out below.

IMPORTANT

- Using Dantherm Cooling nominated service contractors-warranty on product continues
- Using Dantherm Cooling non-approved service contractors-warranty on product becomes void.
- Warranty period starts from date of shipment-warranty of replacement parts shall only apply for the remainder of the warranty period of the original product.

Any transportation, related service labor, diagnosis calls, filters, driers, and refrigerant are not included.

In the event all related service labor is performed by DANTHERM COOLING nominated service contractors, the replacement part shall be warranted by DANTHERM COOLING for the remainder of the warranty period for the original product.

This warranty does not cover damages or repairs caused by improper installation, misuse of the product, negligent servicing, improper applications, unauthorized modifications, improper electrical supply, failure to follow manufacturer's instructions and rating plate information, accidents, natural disasters, damage in transportation, lack of normal preventive maintenance, or other events beyond DANTHERM COOLING'S control.

This warranty is also subject to the following operating conditions:

- 1) Voltage variation not greater than 10%,
- 2) Frequency variation not greater than 3Hz from nameplate rating
- 3) Cooling load is not greater than product label under rated conditions
- 4) Unit is not restarted for a period of five minutes after accidental or intentional shut-off
- 5) Operation is not subject to abnormal conditions or customer, user misapplication
- 6) Customer or user does not modify, abuse, or neglect the product
- 7) Refrigerant specified on nameplate is only refrigerant used
- 8) Customer or user complies with all other installation, maintenance, and operating instructions. Cost of repair or replacement of consumable parts is not covered under the terms of this warranty.

THIS WARRANTY CONSTITUTES THE EXCLUSIVE REMEDY OF ANY PURCHASER OF A DANTHERM COOLING HEAT EXCHANGER, AIR CONDITIONING UNIT AND IS IN LIEU OF ALL OTHER WARRANTIES. THIS ALSO INCLUDES, WITHOUT LIMITATION, ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR USE, OR FOR A PARTICULAR PURPOSE. IN NO EVENT SHALL ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR USE, OR FOR A PARTICULAR PURPOSE EXCEED THE TERMS OF THE APPLICABLE WARRANTY STATED ABOVE, AND DANTHERM COOLING SHALL HAVE NO OTHER OBLIGATION OR LIABILITY, EXPRESS OR IMPLIED. IN NO EVENT SHALL DANTHERM COOLING BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE. SOME STATES DO NOT ALLOW LIMITATIONS OR EXCLUSIONS, SO THE ABOVE LIMITATIONS AND EXCLUSIONS MAY NOT APPLY TO YOU.

RETURN MATERIAL AUTHORIZATION PROCEDURE

In the unlikely event of unit failure, the following return procedure shall be adopted:

- All product returns require a Return Material Authorization number regardless of reason.
- The customer is required to contact the Quality Department at Dantherm Cooling, Inc. in Spartanburg, SC at +1-864-595-9800 to obtain an RMA number.

The following information must be provided prior to a RMA number being issued:

- Dantherm Cooling, Inc. part number(s) of product to be returned
- Dantherm Cooling, Inc. serial number(s) of product to be returned.
- Number of units requested to be returned. Reason for return.
- Contact name, phone and fax number. Date of product receipt.
- Invoice number and purchase order number covering the unit(s).

The customer is responsible for suitably packaging the unit(s) securely, ideally in the original packaging, marking all cartons with the RMA number and shipping them prepaid to the designated site specified by Dantherm Cooling, Inc.

IN NO EVENT SHALL DANTHERM COOLING, INC. ACCEPT ANY SHIPMENT WHICH DOES NOT COMPLY WITH THE ABOVE PROCEDURES.

REMOVE THE CONDENSATE HOSE AND ADAPTER FROM THE BOTTOM OF THE UNITS PRIOR TO DISMANTLING THE AIR CONDITIONER AND RESTING IT ON THE GROUND.

DECLARATION OF CONFORMITY

Dantherm Cooling Inc., Spartanburg, SC hereby declare that the units PrecisionAir 50/60Hz are in conformity with the following directives:

UL 60335-1 Fifth Edition

UL 60335-2-40 First Edition

CAN/CSA-C22.2 No. 60335-1-11 First Edition

CAN/CSA-C22.2 No. 60335-2-40 .. First Edition

Spartanburg, SC – September.20.2018

Recycling: The unit should be recycled according to national rules and procedures to protect the environment. Please consult your local authorities for further information.



DANTHERMCOOLING.COM

TECH.SUPPORT@DANTHERMCOOLING.COM | 864-595-9800

671 SPRINGFIELD ROAD | SPARTANBURG, SOUTH CAROLINA 29303