Specification and Manual

Customer:			
Description:	Heater for Equipment (Wall Mounting)		
Customer Part No.:		Rev.:	
Delta Model No.:	HEH080AB	Rev.:	03
Sample Date Code:			
Sample Issue Date:	MAY.29 2020		

Please send one copy of this specification back after you signed approval for production pre-arrangement

Approved by: _____

Date: _____

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Description

This document is an installation and the characteristics of Delta HEH series. Before installing the unit, please read this manual thoroughly, and following the instructions contained in it. The document is the exclusive property of Delta Electronics, Inc. it should not be distributed, reproduced, or any other format without prior permission of Delta. Specifications are subject to change without notice.

Packing & Shipping

During handling or transport, it should be handled and transported with care. Please Pay attention to the below icons on the package. After power on please make sure there is no abnormal acoustic noise.

Safety Notes

Before installing heater, read these instructions carefully. Failure to follow these instructions could damage the product or cause a hazardous condition. 2. Check the ratings on the heater label to assure the product is suitable for your application.

Meaning of WARNING and CAUTION notices:

⚠ **Warning**:

To avoid electric shock and equipment damage, disconnect any power supplies to the enclosure before installing the electric heater. Do not power on any circuits before all internal and external electrical and mechanical clearances are checked to assure that all assembled equipment functions safely and properly.

1. Installation work and electrical wiring should be done only by qualified personnel in accordance with all applicable codes, standards and national wiring regulations.
2. Use this unit only in the manner intended by the manufacturer. If there is any question, please contact the manufacturer.

3. Install the heater in accordance with the instructions in this installation manual. Improper installation may result in damage, electric shock or fire.
4. Make sure that all wiring is secured, that specified wires are used, and there is no strain on the terminal connections or wires.
5. Before serving or cleaning unit, switch power off and disconnect power supply.
6. When cutting or drilling into wall or ceiling, do not damage electrical wiring or hidden utilities.
7. Be sure to use only the specified accessories and parts to complete installation.
8. Protective grounding connection: The enclosure must be grounded at the protective ground terminal. Use recommended wire and use spring washer to avoid loosening.
9. To reduce the risk of electrical shock: Means for disconnection must be incorporated in the fixed wiring in accordance with the wiring rules.
10. This appliance is intended for use only by qualified personnel.

⚠ **Caution:**

Do not use these electric heaters in dusty, dirty, corrosive, or hazardous locations. Adequate protection must be taken to protect people from potential burns and to protect other components from this heat. Always allow the heater to cool before touching it. Thermal sensitive devices or materials may need to be located further from the heater than the minimum recommended distance. Heaters must not be installed on wood or other combustible surfaces. This heater must only be installed in a totally enclosed enclosure.

1. Do not allow children to touch it. Avoid placing any object on it.
2. Do not block the air inlets or exits.
3. Do not install heater at any place where there is a danger or flammable gas leakage.
4. To avoid injury, do not touch exhaust air or surface during operating or just turn off products.

5. This appliance is not to be used by any persons with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given proper supervision or instruction.

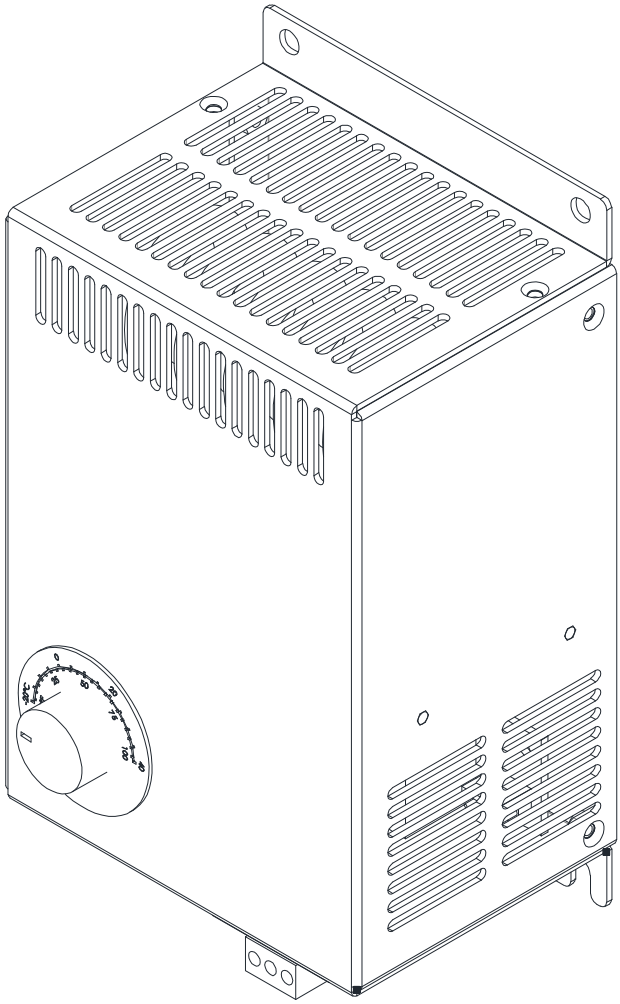
6. Children should be prevented from playing with the appliance.

Part no.:

Delta model no.: HEH080AB

Specification for Approval

Customer :		
Description : Heater for Equipment (Wall Mounting)		
Customer P/N :		Rev. :
Delta model no. :	HEH080AB	Rev. : 03
Sample revision. :		Date Code :
Sample issue date :	MAY.29 2020	Quantity :1 pc



Part no.:

Delta model no.: HEH080AB

1. Product Instruction

1-1. General Description

The heater is designed for warming up the air in enclosure. It can avoid equipment damaged at lower temperature and water condensation. The heater can be mounted on the wall of cabinet.

HEH X1 X X - XXX
(1) (2) (3) (4) (5)

No	Item	Digit	Specification
(1)	Product Message	HEH	Heater
(2)	Cooling Capacity (W)	X1	X1=080 (800W)
(3)	Operation Voltage	A	AC input
(4)	Product Version	B	N/A
(5)	Customer ID	N/A	N/A

1-2. Main Feature & Model Number

Dimensions, Weight & Mounting method		
Dimension (H x W x D) (without flange)	mm (inch)	187 x 108 x 79.5 (7.4 x 4.3 x 3.1)
Application		Indoor
Weight	Kg (lbs)	0.8 (1.8)
Mounting Method		Door/Side
Color (optional)		Silver
Environmental Protection & Performance		
Operating Temperature Range	°C (°F)	-30 to +40 (-22 to +104)
Operating Humidity		Internal: 0~90% RH, non-condensing
Storage Temperature	°C (°F)	-40 to +75 (-40 to +167)
Storage Relative Humidity	RH	Internal: 0~90% RH, non-condensing
Protection for Dust ,Wind and Water (External)	IEC 60529	IP20
Cooling Capacity & Operational Data		
Rated Heating Capacity*	W	800
Rated Heating Current*	A	7 (at 115Vac)
Rated Internal Airflow	CFM	35 REF.
Power & Range		
Input Voltage	VAC	115
Input Voltage Range	VAC	104~126
Inrush Current **	A	21

Key Components		
Controller		NA
Communication port		NA
Fans		Delta High Efficiency Fan

** The Heating capacity (W) is defined as W=V*A at 0 °C*

W : power consumption

V: Operating Voltage

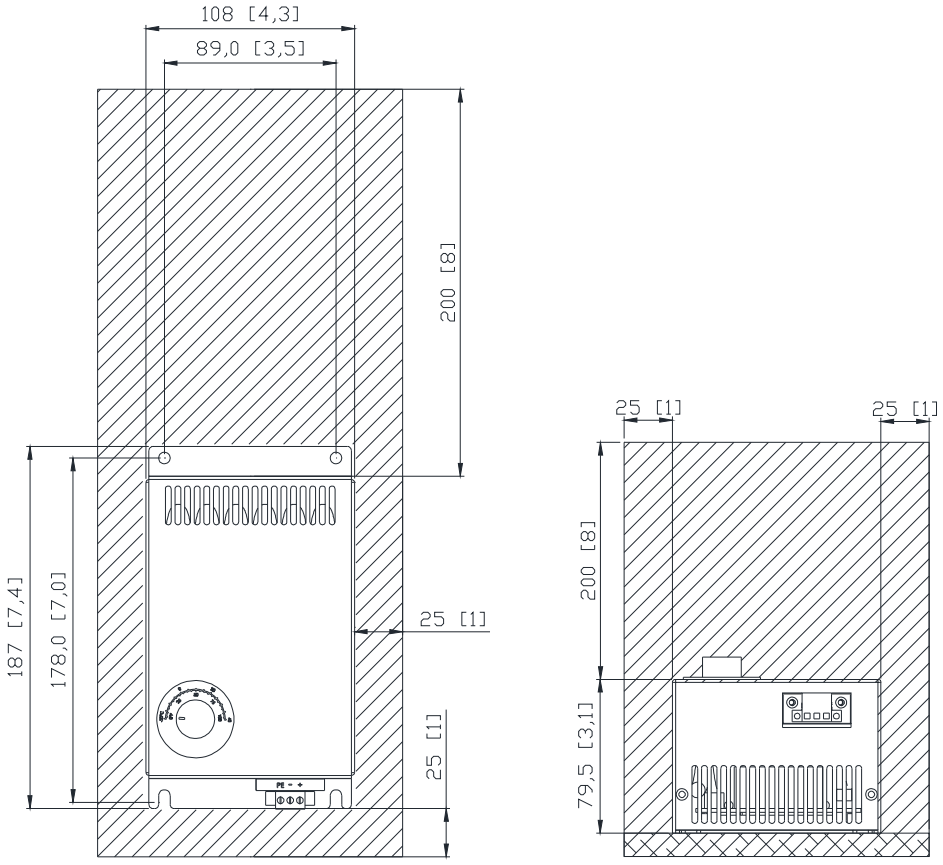
A : Operating current

*** Test condition are AC input 115Vac that is cold start at ambient temperature 25 °C. Please check the notice at section 2 – Electrical specification.*

1-3. Dimension

1. Heaters should be installed at center and low position in the enclosure for optimum heat distribution.
2. Heater can't be installed on wood or other combustible surfaces.
3. The heater should be mounted in a vertical position with the terminal connect at the bottom and the air outlet at the top as shown.
4. The recommended clearances shown by the shadowed area indicates the space that should be kept free for optimum operation of the heater and safe of components in the enclosure components must not be placed closely the heater discharge area. Please refer Temperature rise chart, the recommended distance is 200mm as usual.

Vertial Surface Mounting **Optional Horizontal Surface Mounting**



Unit: mm(inch)

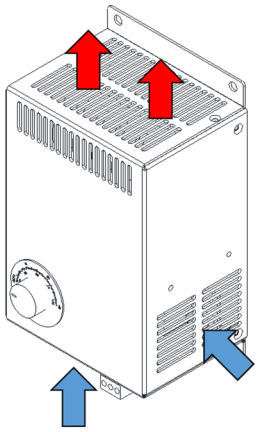
Material: Case AL sheet

Dimensional Tolerance: ±1mm

1-4. Thermal and Airflow

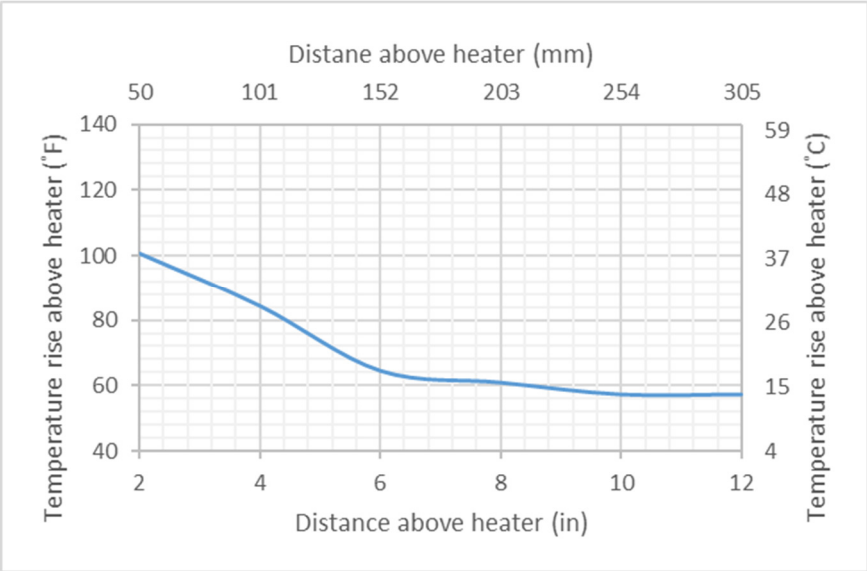
Airflow circulation is shown in below diagram. An internal temperature sensor has been placed in the return air for safe operation.

Cool air flows into the heater, and warmed up by PTC heating element inside of case, then supplied to the system.



** Minimum gap for both of cool air inlet and warm air exhaust is required to avoid short circulation*

- Temperature rise



Temperature rise vs. distance above heater

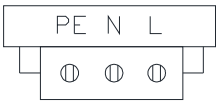
2 Electrical Specification

2-1. Indicator & Connector

- **Power Supply Connector**

  Power input: AC power input with blade terminal.

  (1) AC Power Connect



Heater starts to heating point

(2) Electrical connection

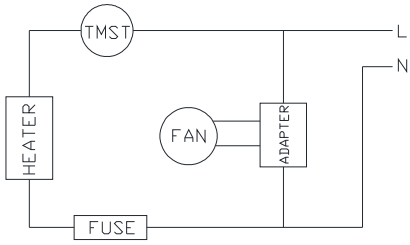
Power input: Terminal block 2P with AC L & N input.

(Mate with AWG 12~28 300V 20A)

*Thermostat (panel): setting range: -20~40°C

(Heater starts to heating point,

Tolerance 5°C, Switching off difference 7±4°C)



Fuse: Cut-out temperature: 167°C

Note: DC Fan is powered by adapter (AC/DC convert).

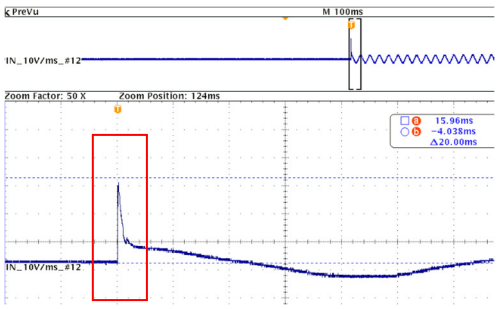
* The on/off temperature by user to setup

- **Startup average current and inrush current：**

  The startup average and inrush current waveform are defined as bellow table.

  These test are all finished at ambient 25°C at 115Vac.

  Tested waveform to startup average current and inrush current.

Item	Current and time	Wave form
Inrush current	Typical current: 20.5A Duration Time: 280usec Measuring methods: Power on AC input then measure the peak current value.	

2-2 Protection

- **Over Temperature Protection:**
  Fuse: Cut-out temperature: 167°C

3. Environmental Condition

- **Operating Temperature**
  -30 °C ~ +40 °C (-22 °F ~ +104 °F)

- **Storage Temperature**
  -40 °C ~ +75 °C (-40 °F ~ 167 °F)

- **Operation Humidity**
  Internal air loop: 0 ~ 90 % RH, non-condensing

- **Ingress Protection Rating**
  IP20 (IEC60529)

4. Reliability Table

Test item	Condition
High temperature	IEC 60068-2-2
Low temperature	IEC 60068-2-1
High temp. /High humidity	IEC 60068-2-14 TEST Nb
Temperature cycle	IEC 60068-2-3
Vibration	ETSI 300 019-1-4 CLASS 4.1
Package bump	IEC 60068-2-29

- **MTBF**
  The L10 Fan life is expected to be at least 80,000 hours continuous operation at 40°Cwith 15 ~ 65%RH .@ label rated voltage.

5. Safety Certification

UL File E358666

6. Fault analysis and processing

Fault State	Analysis of the Reasons	Solutions
Power on, and the Heater is no heating	• Power failure or no power. • The target temperature is higher than Thermostat on temp • Heater failure.	• Check the power supply and the electric circuit. • Check the ambient temperature to define heater Is failure or not • Please contact Delta or authorized Delta service agent.
Power on, Heater is always at heating status.	• The target temperature is lower than Thermostat off temp • Heater failure	• Check the ambient temperature to define heater Is failure or not, • Please contact Delta or authorized Delta service agent.
Power on, the Fan is stop but the heating is enable at low temp condition	• Fan lock • Heater failure	• Power off product than check the Fan blade is no block by foreign matter • Please contact Delta or authorized Delta service agent.
Power on, the Fan is running but the heating is disenable at low temp condition	• Over temperature protect. • Heater failure	• Check the heater air input and output is no block, If the heater surface is still hot, wait for surface cold down and power on again at low temp condition for check the over protect is clear or not. • Please contact Delta or authorized Delta service agent.

7. Reclaim

At the end of the unit working life, the produce must not be disposed of as urban waste. It must be taken to a special local authority differentiated waste collection center or to a dealer providing this service.

8. Versions

REV.	DESCRIPTION	DRAWN	CHECKED			APPROVED	ISSUE DATE
			ME	EE	CE		
00	ISSUE SPEC	VIC.PAN 11/06'19	VIC.PAN 11/06'19	Ted.Tu 11/06'19	------	Diamond CHEN / CW.CHEN 11/06'19	11/06'19
01	MODIFY NAME RULE	VIC.PAN 11/12'19	VIC.PAN 11/12'19	Ted.Tu 11/12'19	------	Diamond CHEN / CW.CHEN 11/12'19	11/12'19
02	MODIFY SECTION.5 SAFETY	EDWARD.LEE 03/10'20	EDWARD.LEE 03/10'20	Ted.Tu 03/10'20	------	Diamond CHEN / GAVIN.CHEN 03/10'20	03/10'20
03	REMOVE Warranty Correction inrush value	EDWARD.LEE 05/29'20	EDWARD.LEE 05/29'20	Ted.Tu 05/29'20	------	Diamond CHEN / GAVIN.CHEN 05/29'20	05/29'20