



Specification For Approval

Customer : _____
Description : Thermoelectric Cooling 200W
Customer part no : _____ Rev. : _____
Delta model no : HET200VC-A01 Rev. : 00
Sample issue no : _____
Sample issue date : FEB.15 2022

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

Approved by : _____

Date : _____

Part no. :

Delta model no. : HET200VC-A01

Table of content

1. Description	4
1-1. General description :	4
1-2. Main feature (Operating 24VDC at 25 ° C).....	4
1-3. Dimension	4
1-3-1 Drawing	5
1-3-2 Mounting panel cutout	6
1-4. Maintenance	7
1-5. Thermal path and airflow baffle	7
2. Electrical specification	8
2-1. Indicator & connector	8
2-2. Cooling Performance VS Temperature Difference	8
2-3. TEC work temperature range.....	8
2-4. Interface	10
3. Environmental conditions	12
3-1. Operating temperature :	12
3-2. Storage temperature :	12
3-3. Humidity	12
3-4. Protection rating	12
3-5. MTBF	12
4. Certified safety	13
5. User cable	13
5-1 Power cable	13
6. Versions	14

Part no. :

Delta model no. : HET200VC-A01

Specification for approval

Customer :

Description : Thermoelectric cooler 200W

Customer P/N :

Rev. :

Delta model no. : HET200VC-A01

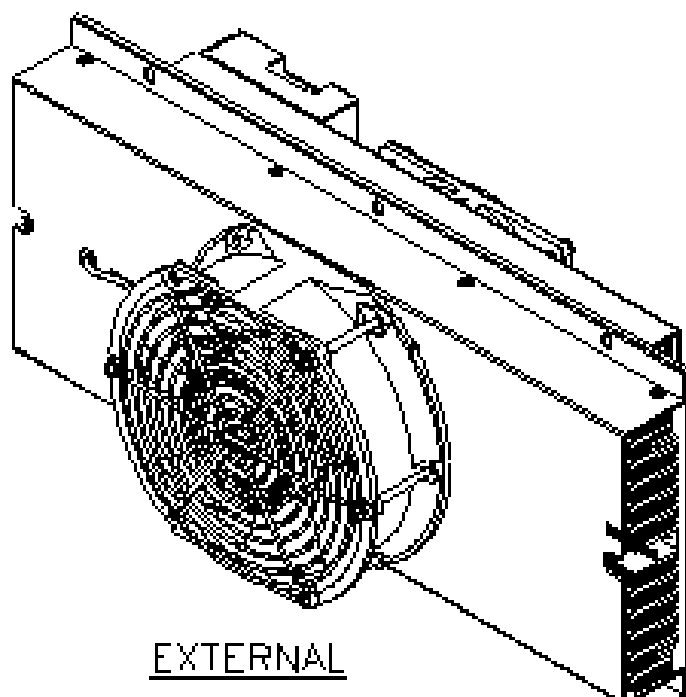
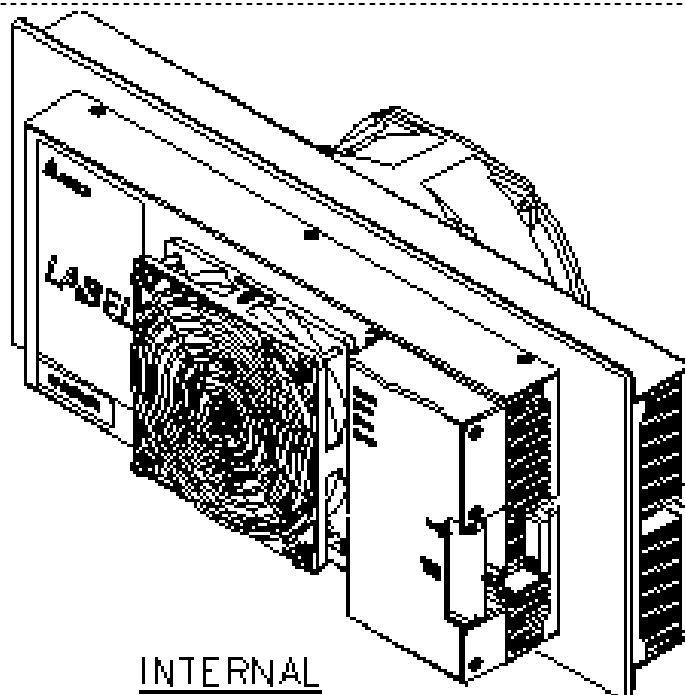
Rev. : 00

Sample revision :

Issue no. :

Sample issue date :

Quantity : sets



Part no. :

Delta model no. : HET200VC-A01

1. Description

1-1. General description :

The Thermoelectric cooler (TEC) is designed for direct air to air heat removal in the cabinet. It is easy to be installed in the cabinet (recommended on the door of the cabinet) with the nuts.

The internal and external air circulation loops of the TEC Module are separated to prevent the entry of dust, humidity and dirt. The unit conforms to IP68 protection rating on the external air circuit.

*IP68: 1.1 m underwater for one hour

1-2. Main feature (Operating 24VDC at 25 ° C)

Main feature	Unit	Model Number
		HET200VC-A01
Outline dimension	mm	400 H x 181 W x 169 D
Weight	Kg	6.0 ± 0.5
Cooling capacity ($\Delta T = 0$ °C)	W	200
Heating capacity @-40 ° C	W	225
Rated voltage	VDC	24 (TYP.)
Operating voltage range	VDC	21-28
Rated Current	A	14.5 (MAX)
Actuality Current	A	12A(TYP.)
Rated Consumption	W	384 (MAX)
Operating temperature	°C	-40~55
Internal airflow rate	cfm	85 (TYP.)
External airflow rate		115 (TYP.)
Acoustic noise at 1M :	dB-A	61.0 dB-A(Typ.)
(Sound pressure)		65.0(Max.)

*Cooling capacity is defined at $\Delta T = 0^{\circ}\text{C}$ and $T_{\text{ambient}} = 25^{\circ}\text{C}$

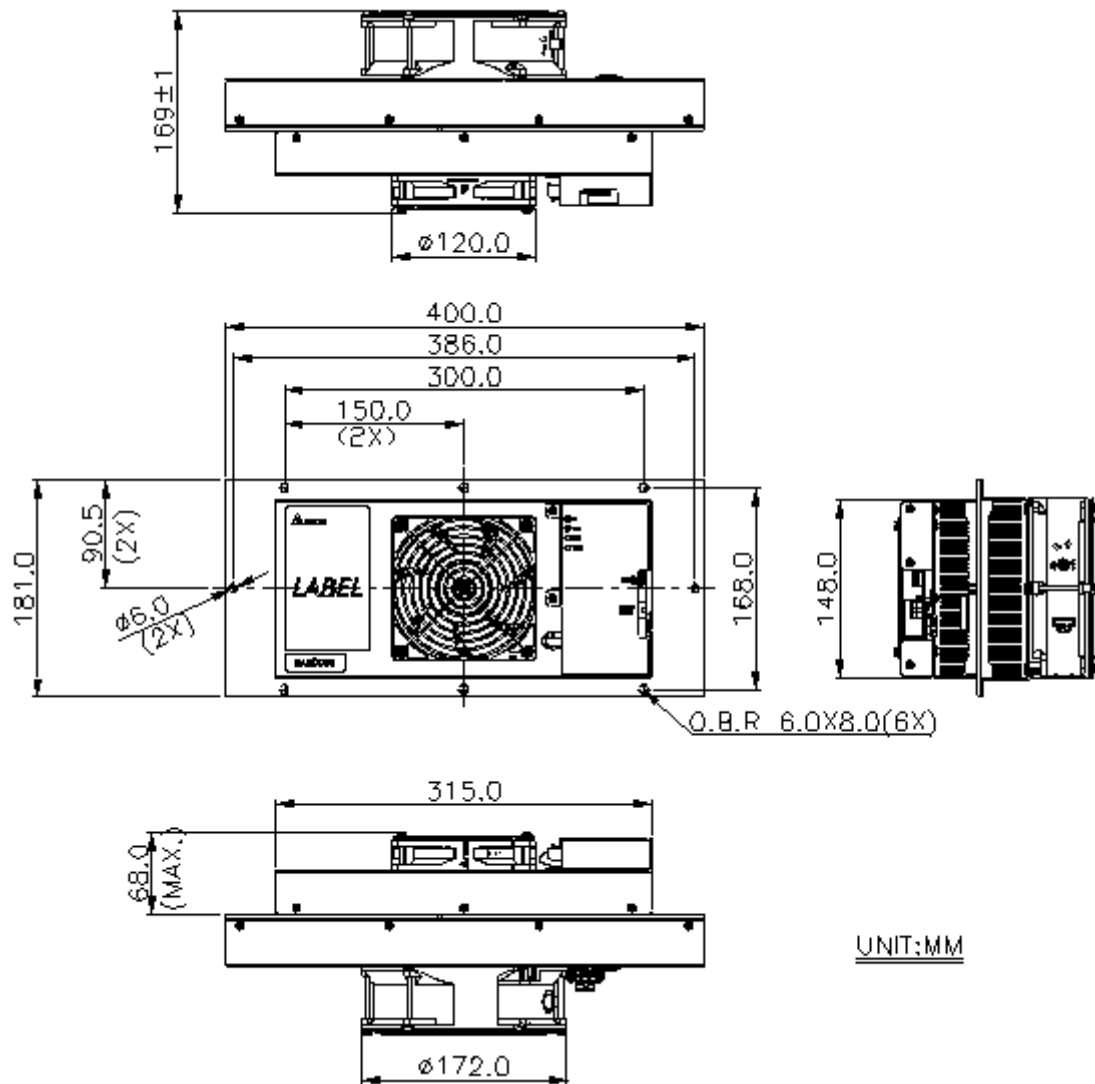
*Cooling and heating capacity is for internal side.

Part no. :

Delta model no. : HET200VC-A01

1-3. Dimension

1-3-1 Drawing



(1) Material : case aluminum sheet , t=1.5mm

(2) Finish : Power paint 75~120um,

(3) Color : RAL 7032

(4) Dimension tolerance:

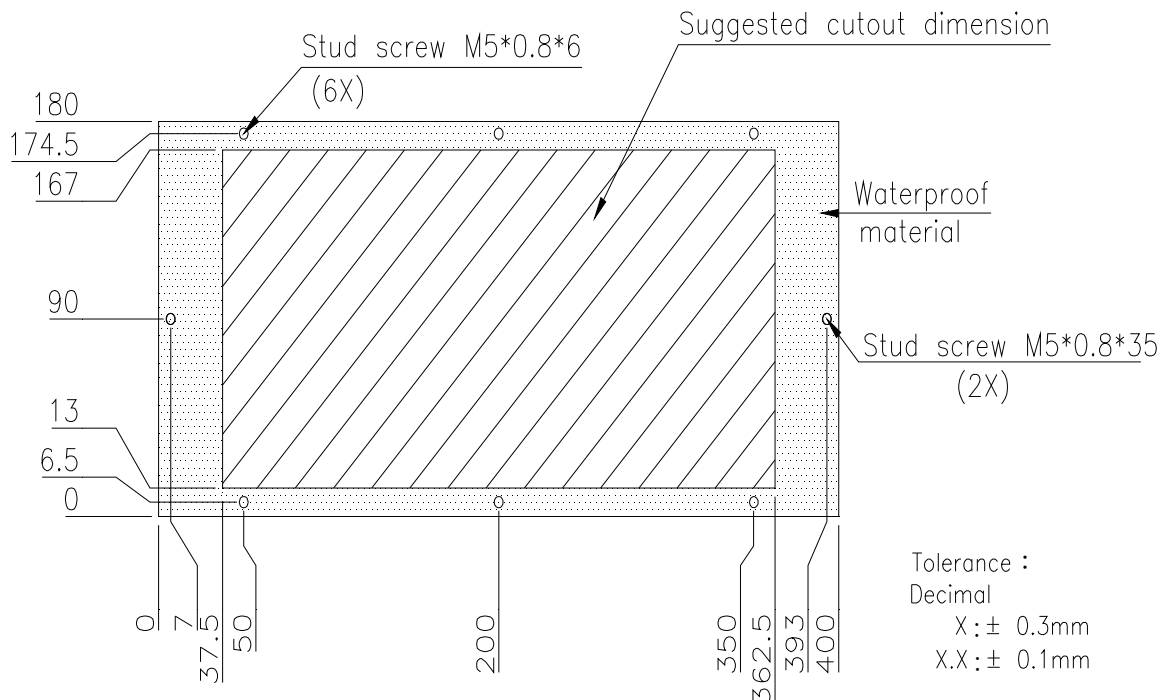
X.X [X.XX] : ± 1.0mm [0.04"]

X.XX [X.XXX] : ± 0.3mm [0.012"]

Part no. :

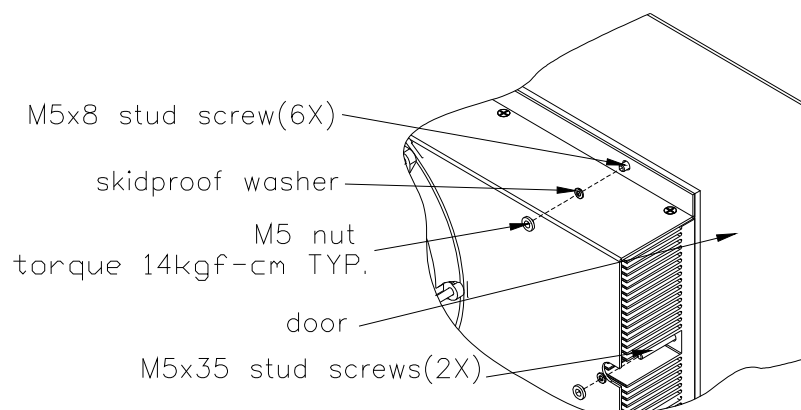
Delta model no. : HET200VC-A01

1-3-2 Mounting panel cutout



User needs to prepare below tool and components for assembly

- Phillips screw driver x 1pcs
- Screw driver for M5 nut x 1pcs
- M5x8 stud x 6pcs
- M5x35 stud x 2pcs
- The screw driver securing torque is 14 kgf-cm



Part no. :

Delta model no. : HET200VC-A01

1-4. Maintenance

- 1-4-1. Be sure to disconnect power supply before disassembly TEC module from customer cabinet.
- 1-4-2. Please refer to Delta authorized engineers for TEC module component replacement service, no allow unauthorized personnel to repair the unit.
- 1-4-3. If the replacement by user himself is necessary, please refer to the exploded drawing shown as previous page and below description for disassembly.

External fan: Disassemble mounting screw of external fan via screw driver & pull out the connector.

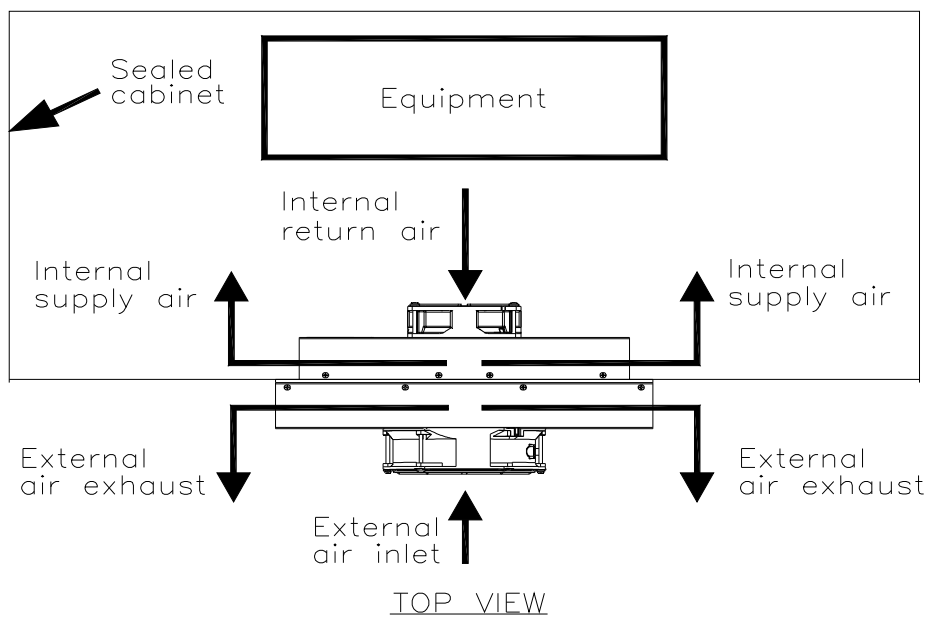
Internal fan: Disassemble mounting screw of internal fan via screw Driver & pull out the connector.

Controller: Need to disassemble internal fan first , then pull-out all cable connection on controller , take off mounting screw of controller finally .

TEC device: Due to TEC device have waterproof sealant protection and thermal conductive compound with heat-sink, please kindly ship back to Delta for replacement.

1-5. Thermal path and airflow baffle

The thermal exchange path is shown in the figure below.



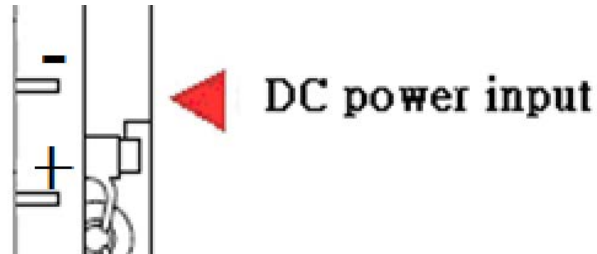
Part no. :

Delta model no. : HET200VC-A01

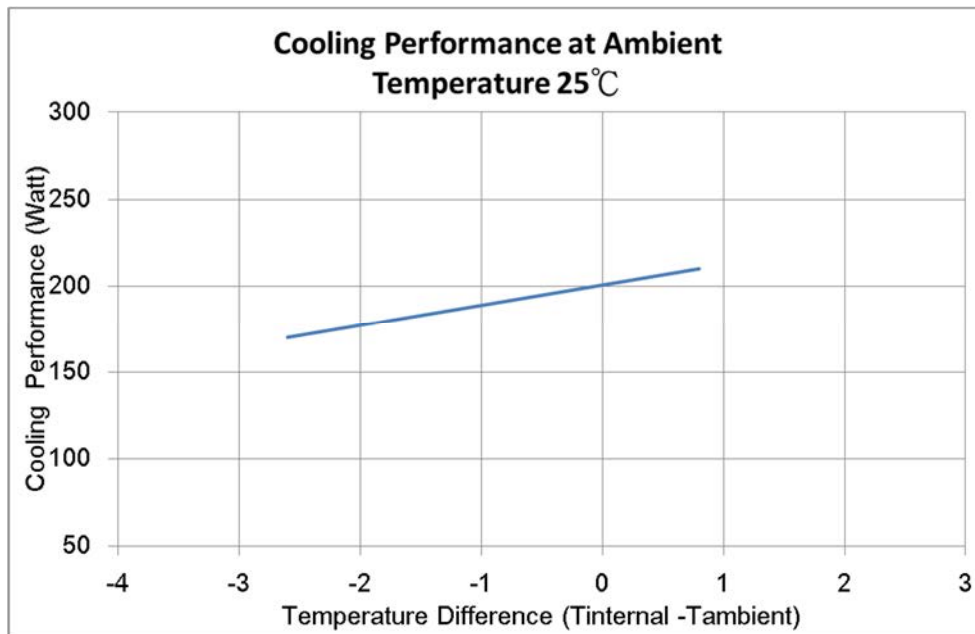
2. Electrical specification

2-1. Indicator & connector

Connector " -24V VDC " mate with JWT C4201WR0-2*3PNL



2-2. Cooling Performance VS Temperature Difference

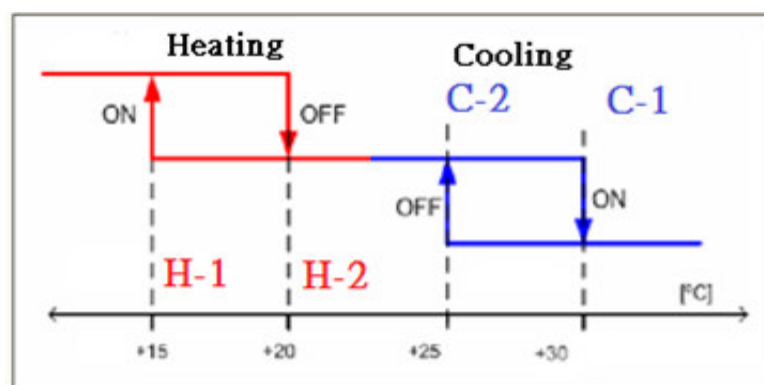


2-3. TEC work temperature range

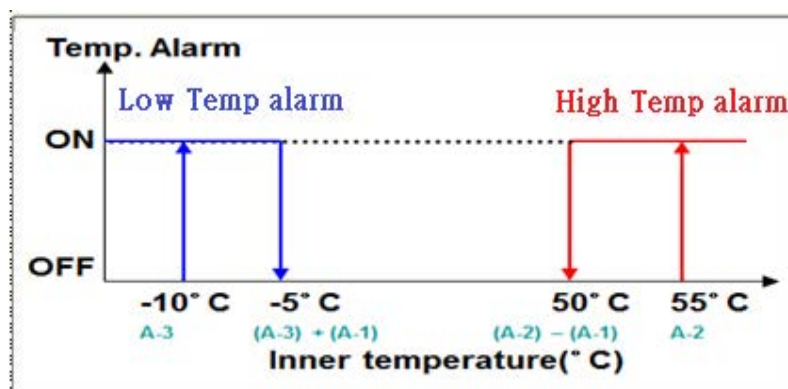
TEC module has two work status, cooling and heating, according to the cabinet internal temperature (detect by on-board NTC). The default setting of TEC work temperature is as bellow picture.

Part no. :

Delta model no. : HET200VC-A01



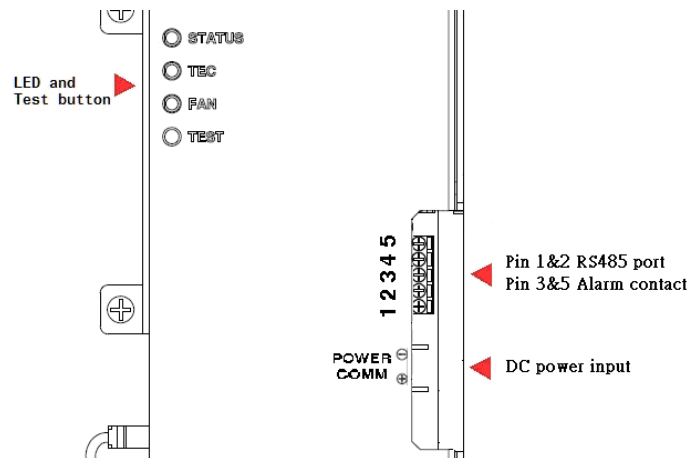
There is an alarm function for high temp & low temp. status. The alarm default temp point is as bellow:



Part no. :

Delta model no. : HET200VC-A01

2-4. Interface



LED and Test button:

■ LED "STATUS"

- (Green) : TEC module work in cooling mode
- (Orange): TEC module work in heating mode
- (Dark): TEC module TEC function OFF

■ LED "TEC" *

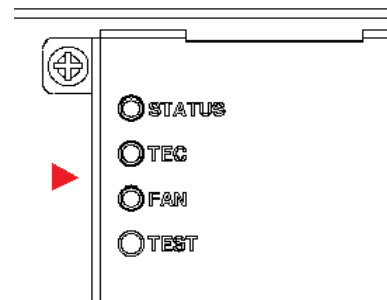
- (Green) : TEC normal
- (Red) : TEC failed
- (Blink green) : TEC normal in test process
- (Blink red) : TEC failed in test process or Sensor failed

■ LED "FAN"

- (Green) : Fan normal
- (Red) : Fan failed
- (Blink Green) : Fan normal in test process
- (Blink Red) : Fan failed in test process

■ CLEAN/TEST

There is an auto test button on control board, user can press this button to run heating and cooling process. The FAN & TEC LED will be blinking during this process. The process is about 3.5 min. User can turn off this function by pressing this button again.



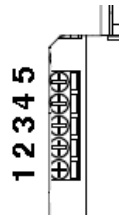
Part no. :

Delta model no. : HET200VC-A01

ISO RS485 port:

- Pin1 :RS485 A
- Pin2: RS485 B

Alarm dry contact: Contact
(MAX. 60VDC, 400mA)



Pin 1&2 RS485 port
Pin 3&5 Alarm contact rating

- Pin3 to pin4 "Close":
Normal
- Pin3 to pin4 "Open":
Fan, TEC, sensor filed, Temp alarm or power off
- Pin3 to pin5 "Open":
Normal
- Pin3 to pin5 "Close":
Fan, TEC, sensor failed, Temp alarm or power off

TEC module contain RS-485 communication function for adjust TEC temperature point. This function is only for factory setting or engineer test. If customer has any special application, please contact Delta to verify first.

Part no. :

Delta model no. : HET200VC-A01

3. Environmental conditions

3-1. Operating temperature :

-40°C ~ +55°C (-40°F ~ 131°F)

3-2. Storage temperature :

-40°C ~ +65°C (-40°F ~ 149°F)

3-3. Humidity

External air circuit: 0 ~ 100% RH

Internal air circuit: 0 ~ 90% RH

3-4. Protection rating

IP68 (IEC60529) on external side with mounting on door.

*IP68: 1.1 m underwater for one hour

Comply with GR487 salt fog test on external fan

3-5. MTBF

Fan lifetime is expected to have a minimum L10 life of 80,000 hours continuous operation at 40°C with 15 ~ 65%RH at 48 voltage

Part no. :

Delta model no. : HET200VC-A01

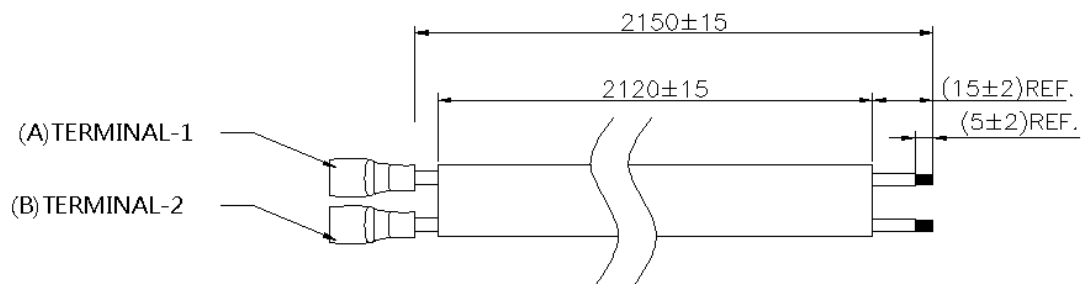
4. Certified safety



5. User cable

Each HET200VC-A01 will provide 1 cable with shipment.

5-1 Power cable



PINOUTS	CABLE WIRE	CABLE WIRE
TERMINAL	COLOR	TYPE
TERMINAL-1	RED(+)	UL1015AWG#18
TERMINAL-2	BLACK(-)	

Part no. :

Delta model no. : HET200VC-A01

6. Versions

REV	DESCRIPTION	DRAWN	CHECKED			APPROVE D	ISSUE DATE
			ME	EE	CE		
00	ISSUE SPEC	Rex.Lyu 02.15'22	Rex.Lyu 02.15'22	Ted.Tu 02.15'22	-----	Diamond CHEN / MARS.WU 02.15'22	02.15'22