



Specification For Approval

Customer : _____
Description : _____ Thermoelectric cooler 200W _____
Customer part no : _____ Rev. : _____
Delta model no : _____ HET200PC _____ Rev. : 05 _____
Sample issue no : _____
Sample issue date : _____ Aug.5 2020 _____

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

Approved by : _____

Date : _____

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Part no. :

Delta model no. :

HET200PC

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Part no. :

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HET200PC

Specification for approval

Customer :

Description : Thermoelectric cooler 200W

Customer P/N :

Rev. :

Delta model no. : HET200PC

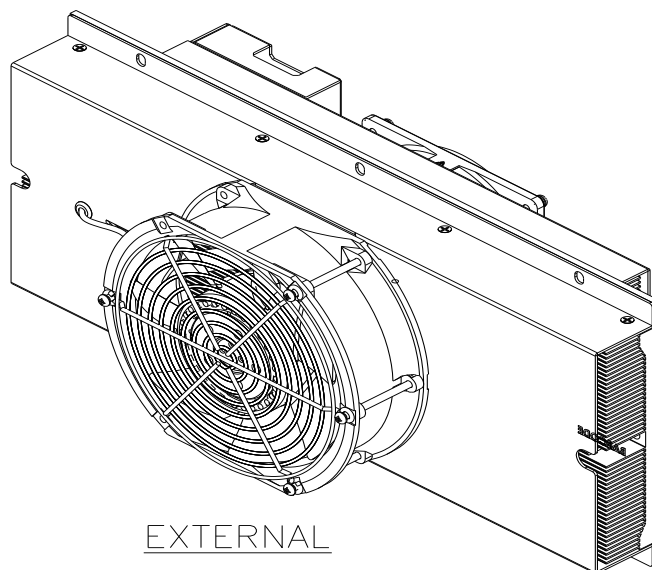
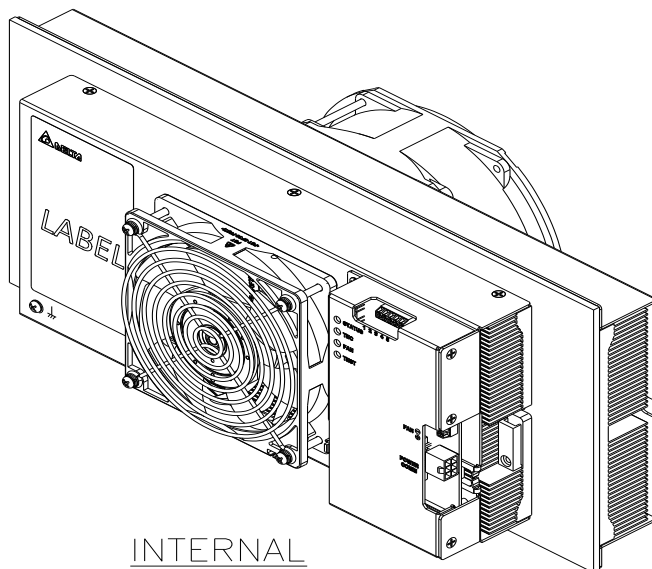
Rev. : 03

Sample revision:

Issue no. :

Sample issue date :

Quantity : sets



Part no. :

Delta model no. :

HET200PC

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 IP55 protection rating on the external air circuit.

1-2. Main feature (Operating 48VDC at 25 ° C)

Main feature	Unit	Model Number
		HET200PC
Outline dimension	mm	400 H x 181 W x 169 D
Weight	Kg	6.0 ± 0.5
Cooling capacity ($\Delta T = 0^\circ \text{C}$)	W	200
Heating capacity @-40 ° C	W	225
Rated voltage	VDC	48 (TYP.)
Operating voltage range	VDC	40-56
Actuality Current	A	6.1 (TYP.)
Rated Current	A	7.4(Max)
Rated Consumption	W	356(Max)
Operating temperature	°C	-40~55
Internal airflow rate	CFM	100 (TYP.)
External airflow rate		120 (TYP.)
Acoustic noise at 1M : (Sound pressure)	dB-A	61.0 dB-A(Typ.) 65.0(Max.)

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

*The cooling capacity is defined when the internal and external airflow rate are at 100 CFM and 120 CFM, accordingly.

*Cooling capacity is for internal side.

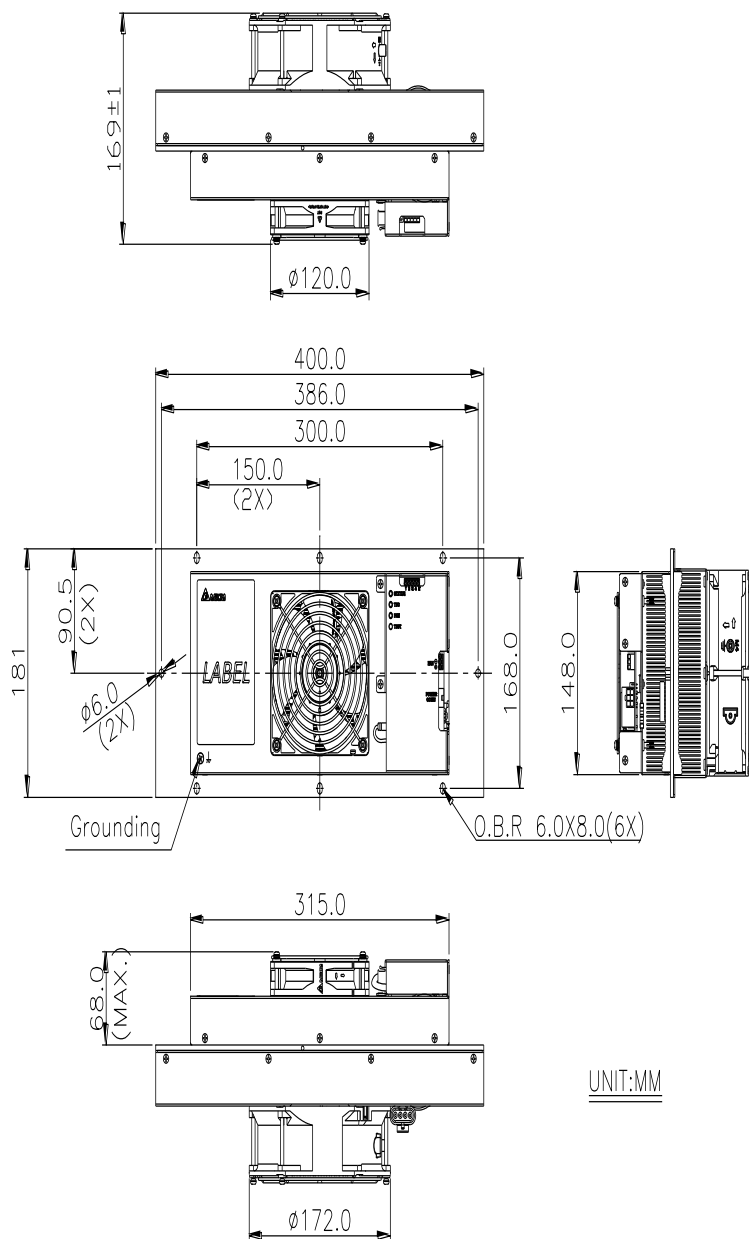
Part no. :

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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"]

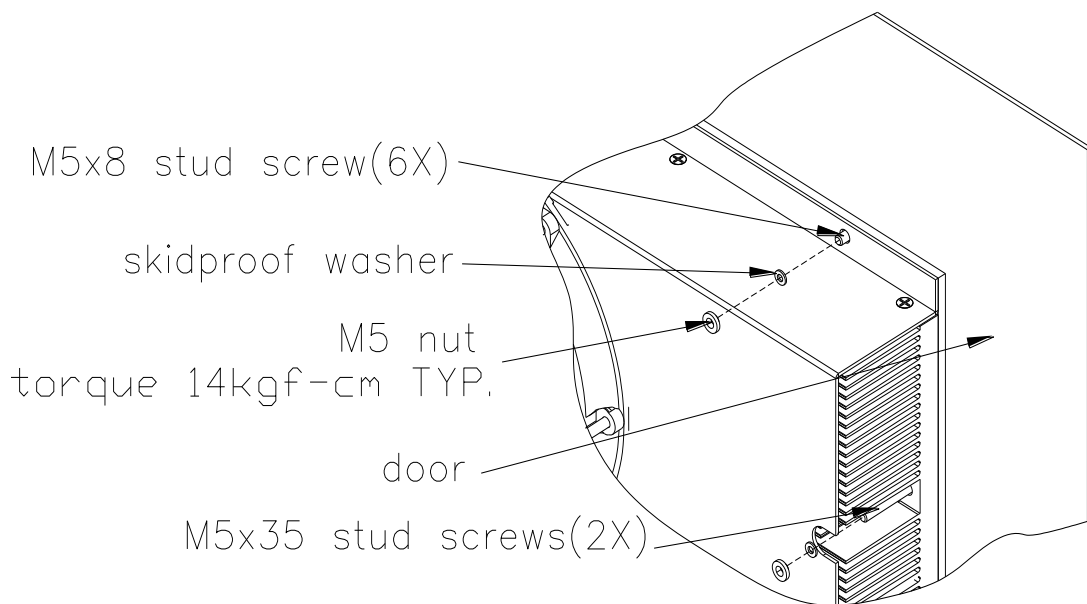
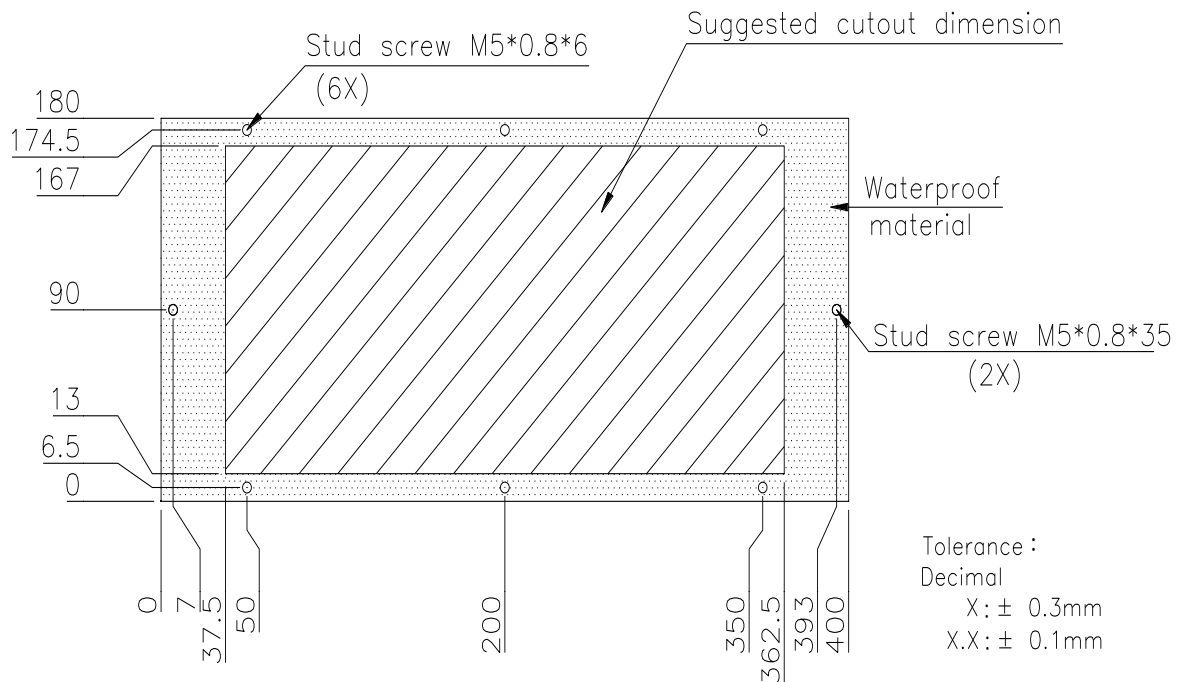
X.XX [X.XXX] : ± 0.3mm [0.012"]

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1-3-2 Mounting panel cutout



Part no. :

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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.

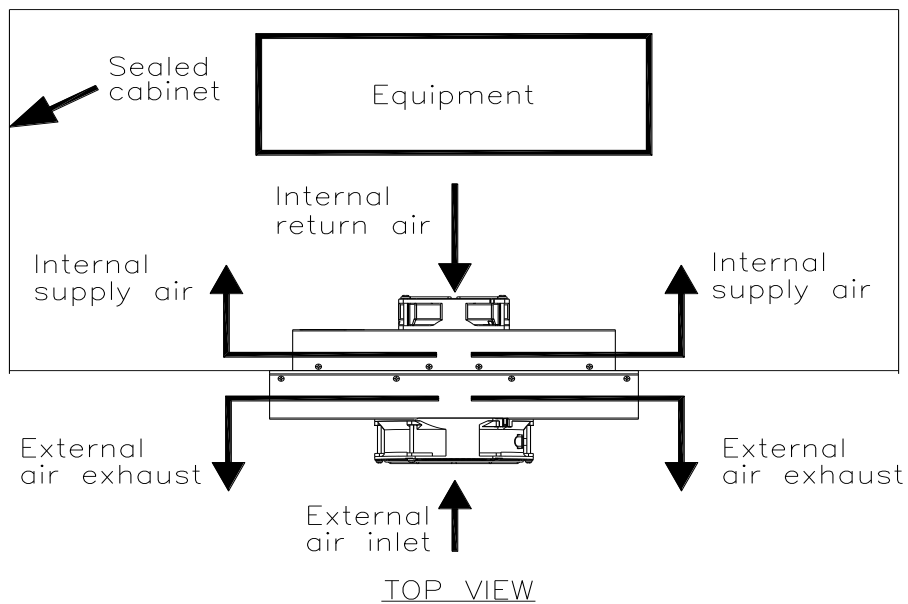
Internal fan: Disassemble mounting screw of internal fan via screw Driver & pull out the connector.

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. :

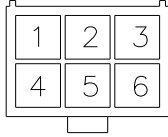
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2. Electrical specification

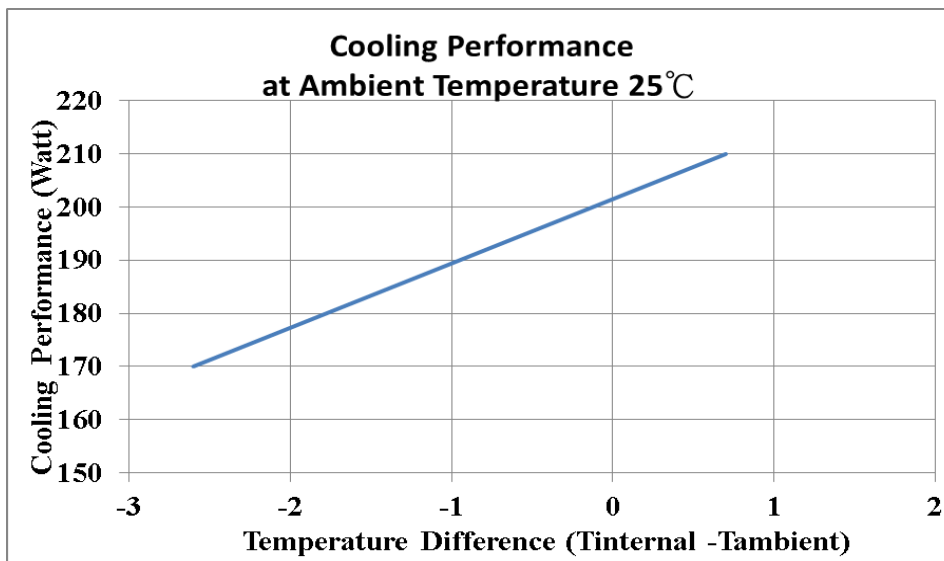
2-1. Indicator & connector

Connector " -48V VDC " mate with JWT C4201WR0-2*3PNL



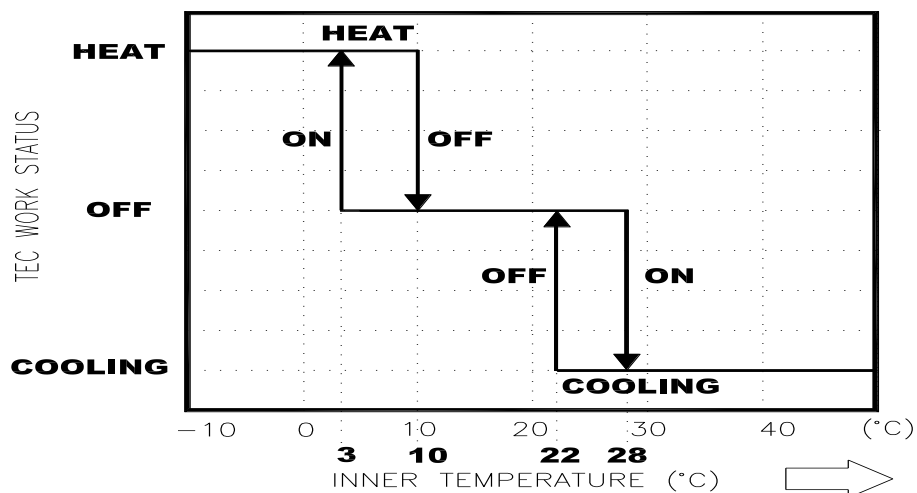
PIN	Function	PIN	Function
1	-48V (-)	4	-48V (-)
2	NA	5	NA
3	0V (+)	6	0V (+)

2-2. Cooling Performance VS Temperature Difference



2-3. TEC work temperature range

HET200PC has two work status, cooling and heating, according to the cabinet internal temperature (detect by on-board NTC).



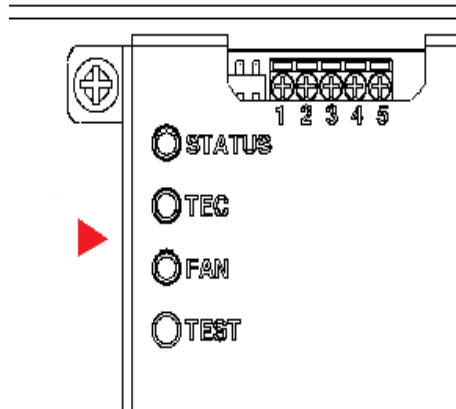
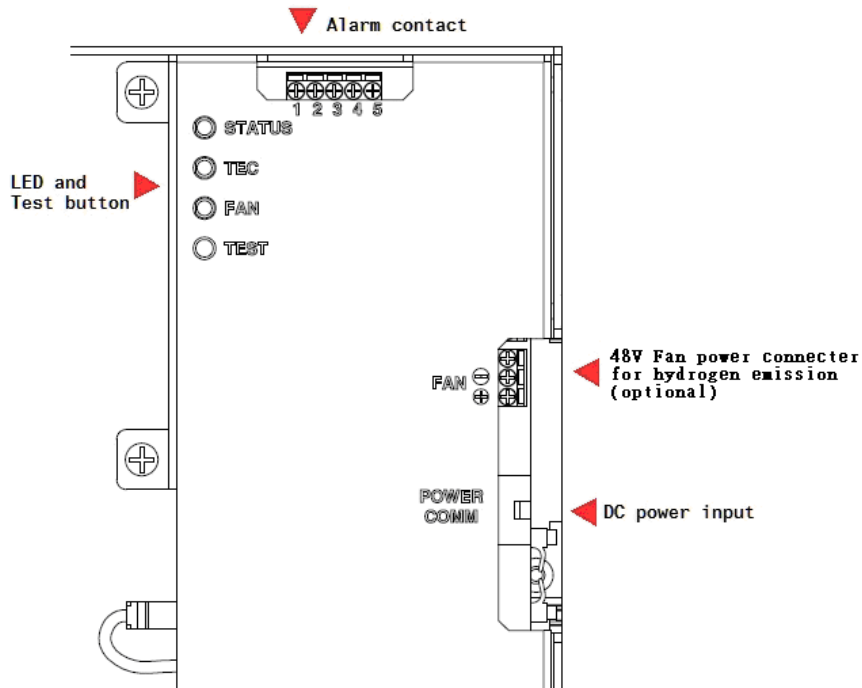
Part no. :

Delta model no. :

HET200PC

2-4. Interface

HET200PC control-board interface is as diagram. The function will be described as following:



LED and Test Button:

■ LED "STATUS"

(Green) : HET200PC work in cooling mode

(Red) : HET200PC work in heating mode

(Dark): HET200PC TEC function OFF

(Blink red) : Sensor failed

Part no. :

Delta model no. : HET200PC

■ LED "TEC" *

(Green) : TEC normal

(Red) : TEC failed

(Blink green) : TEC normal in test process

(Blink red) : TEC failed in test process

■ LED "FAN"

(Green) : Fan normal

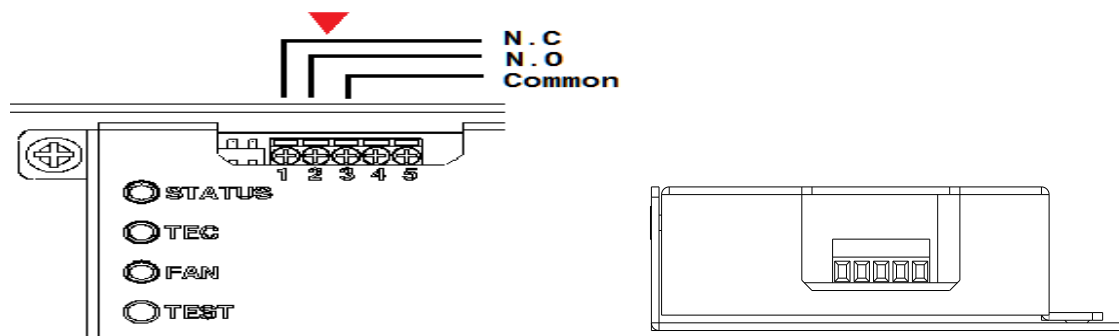
(Red) : Fan failed

(Blink Green) : Fan normal in test process

(Blink Red) : Fan failed in test process

■ TEST

There is an auto test button on HET200PC, user can press this button to run heating and cooling process, the process is about 3~4 mints. User can turn off this function by pressing this button again.



Alarm dry contact: (MAX. 60VDC 400mA or 125VAC, 400mA)

- Pin1 to pin3 "Close":
Normal
- Pin1 to pin3 "Open":
Fan, TEC or sensor failed
- Pin2 to pin3 "Open":
Normal
- Pin2 to pin3 "Close":
Fan, TEC or sensor failed

Part no. :

Delta model no. :

HET200PC

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

IP55 (IEC60529) on external side with mounting on door.

GR487 salt fog test complied on external side

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. :

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4. Certified safety

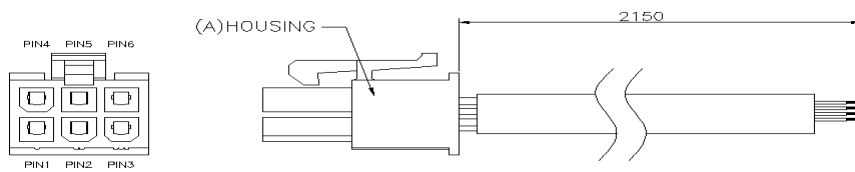
4-1. Safety Mark



5. User cable

Each HET200PC will provide 1 cable with shipment.

5-1 Power cable



PINOUTS			
CONNECTOR (A)	CABLE WIRE COLOR	CABLE WIRE COLOR	CABLE WIRE TYPE
(A) - PIN 1	BLACK	-48V	UL 1061 AWG#22
(A) - PIN 3	RED	+0V	
(A) - PIN 4	BLACK	-48V	
(A) - PIN 6	RED	+0V	

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Rev.	Description	Drawn	Approved	Issue Date
00	ISSUE SPEC	Nick Wang	Ken Chou	2013/9/18
01	Modify the airflow & Certified safety	Nick Wang	Ken Chou	2014/4/22
02	1. Add note on page 4 2. Update the cooling performance chart on page 8 3. Add picture of the pwb cover on page 11	CS Wang	Jerry Yang	2015/12/09
03	Add warranty on page 13,Modify 1-2 2-4 description	CS Wang	Jerry Yang	2016/03/30
04	Change 1D barcode to 2D.	KC.Liao	CW.CHEN	2018/03/22
05	Safety show mark, delete non condensing and warranty	KC.Liao	Mars.Wu	2020/08/05