



Specification For Approval

Customer : _____
Description : Thermoelectric Cooling 200W
Customer part no : _____ Rev. : _____
Delta model no : HET200PB Rev. : 06
Sample issue no : _____
Sample issue date : Aug.5 2020

Modify history

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. : HET200PB

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Part no. :

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Specification for approval

Customer :

Description : Thermal Electric Cooling 200W

Customer P/N :

Rev. :

Delta model no. : HET200PB

Rev. : 06

Sample revision :

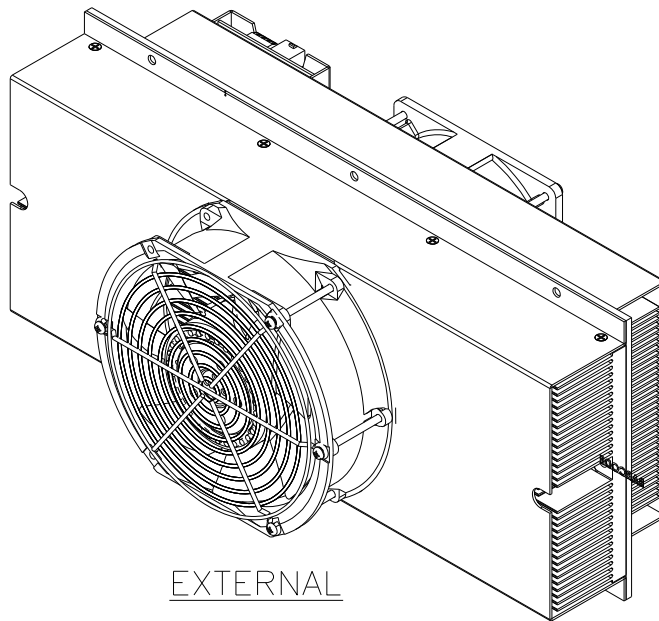
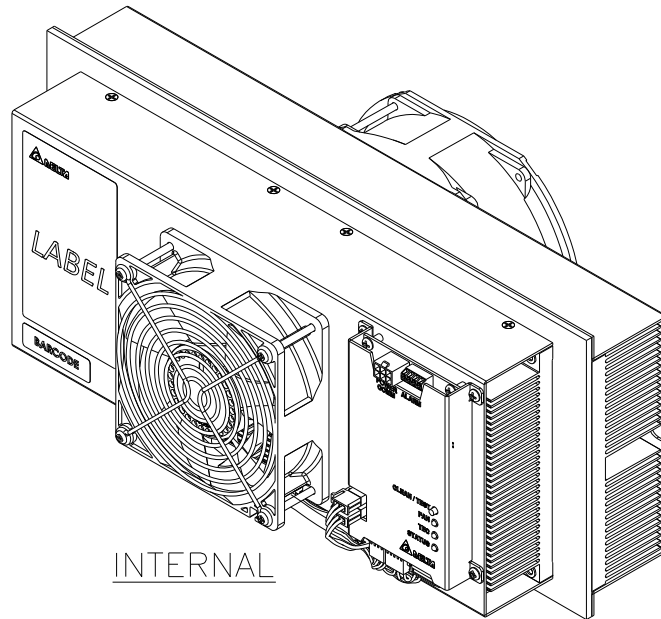
Issue no. :

Sample issue date :

Quantity : sets

Part no. :

Delta model no. : HET200PB



Part no. :

Delta model no. : HET200PB

1. Description

1-1. General description :

The Thermal Electric Cooling (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
		HET200PB
Outline dimension	mm	400 H x 180 W x 208 D
Weight	Kg	9.0 ± 0.5
Cooling capacity ($\Delta T = 0$ °C)	W	200
Heating capacity @-40 ° C	W	225
Rated voltage	VDC	48 (TYP.)
Operating voltage range	VDC	40~56
Actuality Current	A	5.9 (TYP.)
Rated Current	A	8.0(MAX.)
Rated Consumption	W	384(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 $\Delta T = 0$ °C and $T_{\text{ambient}} = 25$ °C

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

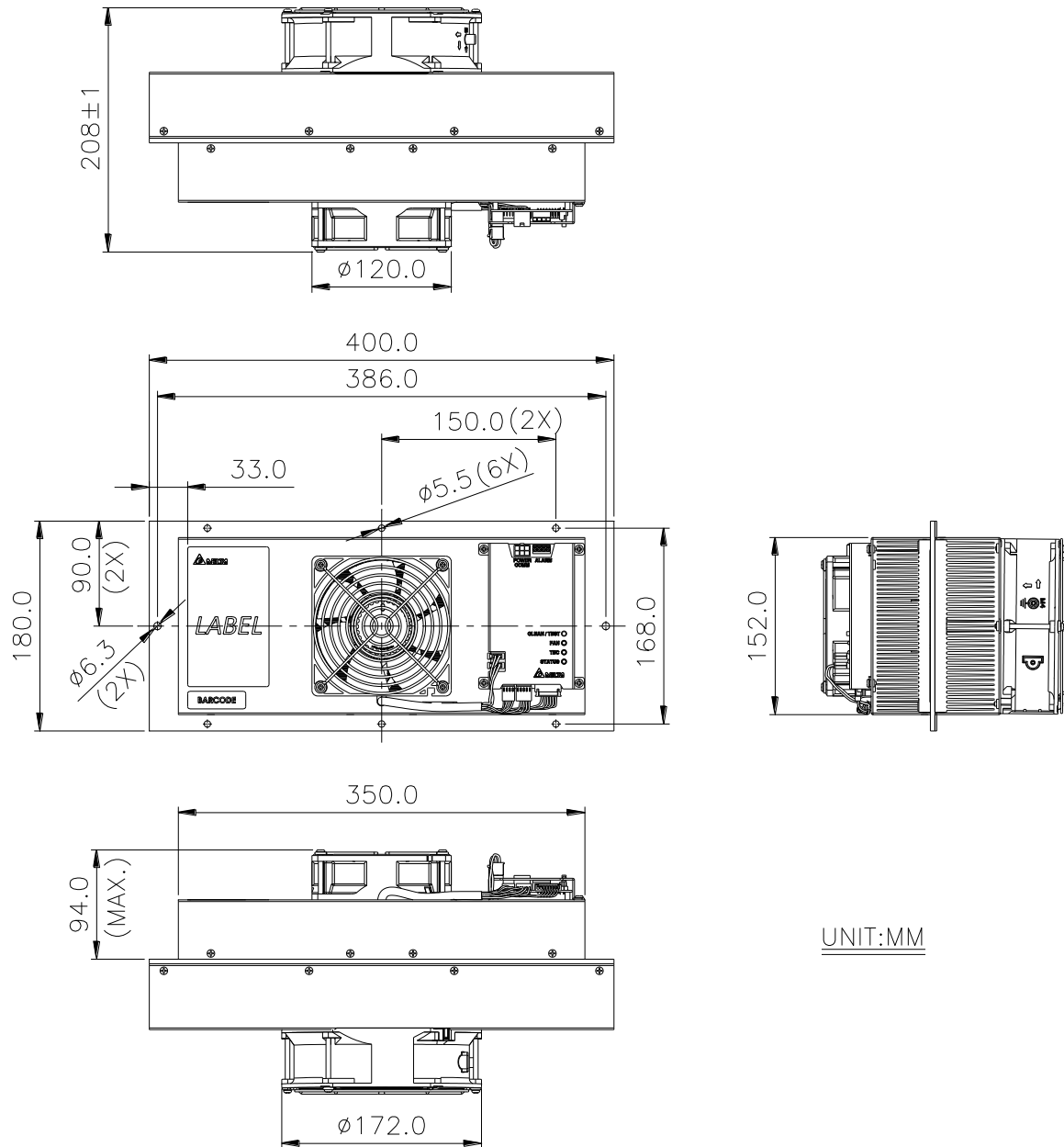
*Cooling capacity is for internal side..

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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:

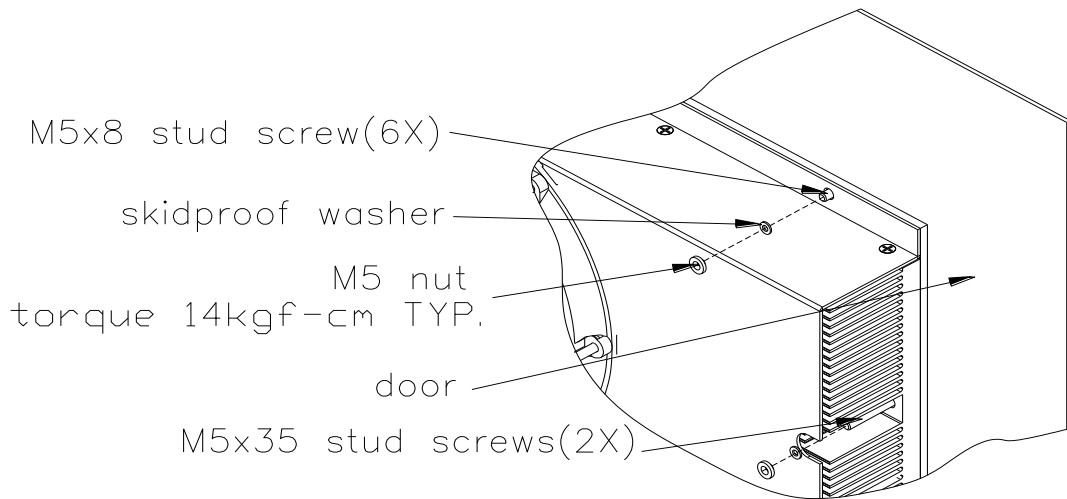
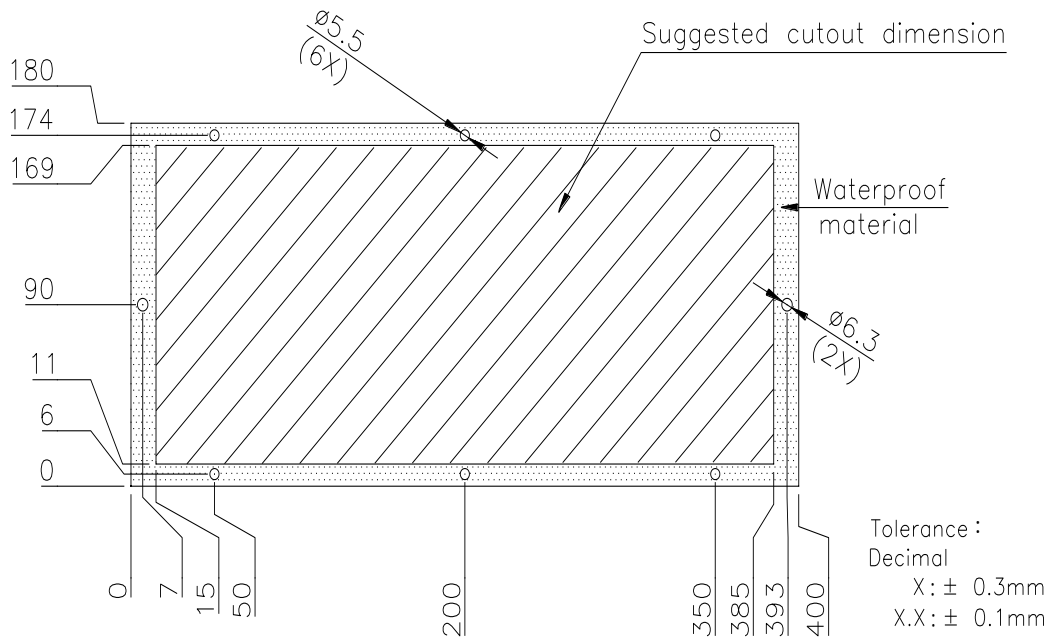
X.X [X.XX] : $\pm 1.0\text{mm}$ [0.04"]

X.XX [X.XXX] : $\pm 0.3\text{mm}$ [0.012"]

1-3-2 Mounting panel cutout

Part no. :

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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.

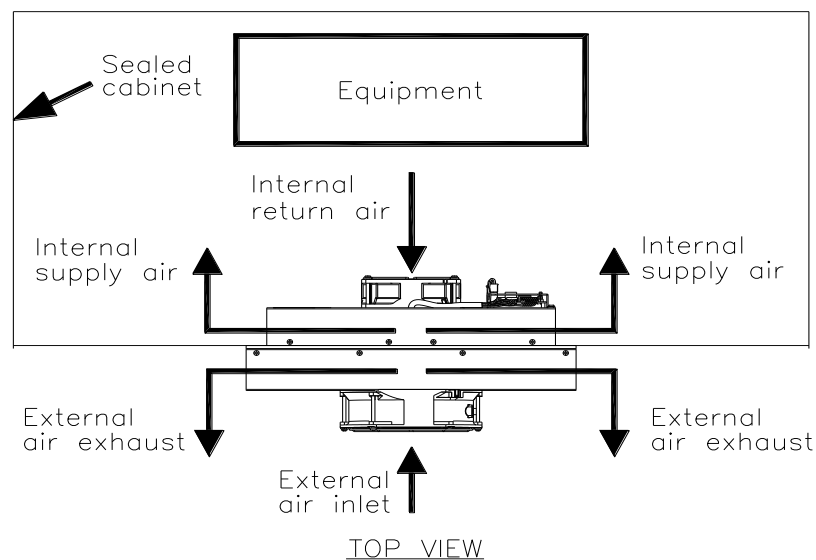
Internal fan: Disassemble mounting screw of internal fan via screw Driver & pull out the connector.

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.



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2. Electrical specification

2-1. Indicator & connector

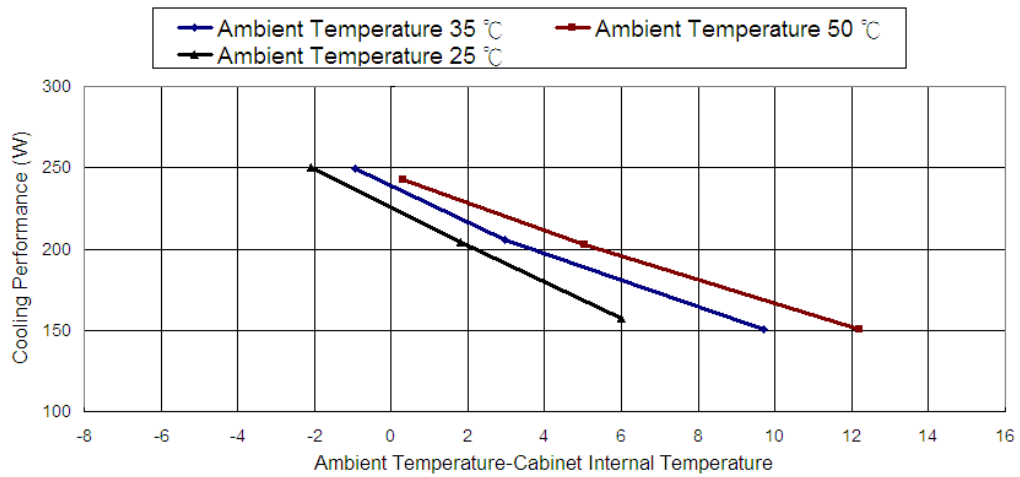
Connector " -48V VDC " mate with JWT C4201WR0-2*3PNL



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

2-2. Cooling Performance VS Temperature Difference

Cooling Performance VS Temperature Difference

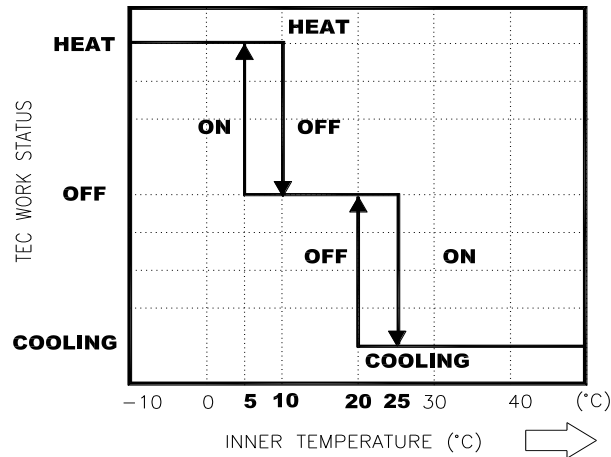


Part no. :

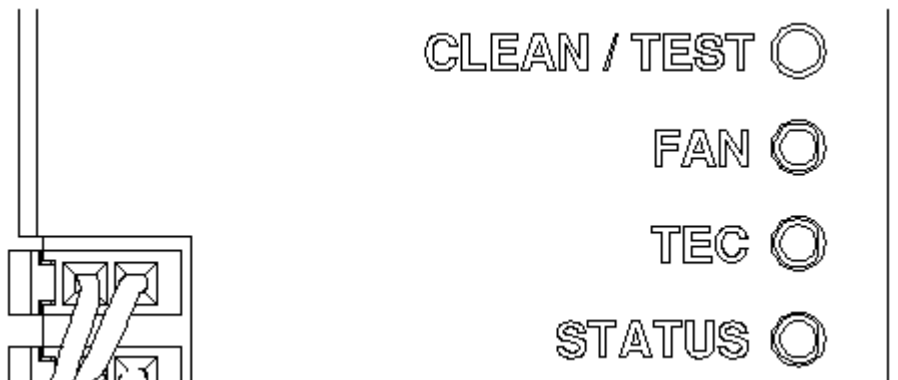
Delta model no. : HET200PB

2-3. TEC work temperature range

HET200PB has two work status, cooling and heating, according to the cabinet internal temperature (detect by on-board NTC).



2-4. Interface



- LED "FAN"
 - (Green) : Fan normal
 - (Red) : Fan failed
 - (Blink Green) : Fan normal in test process
 - (Blink Red) : Fan failed in test process
- 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 "STATUS"
 - (Green) : HET200PB work in cooling mode

Part no. :

Delta model no. : HET200PB

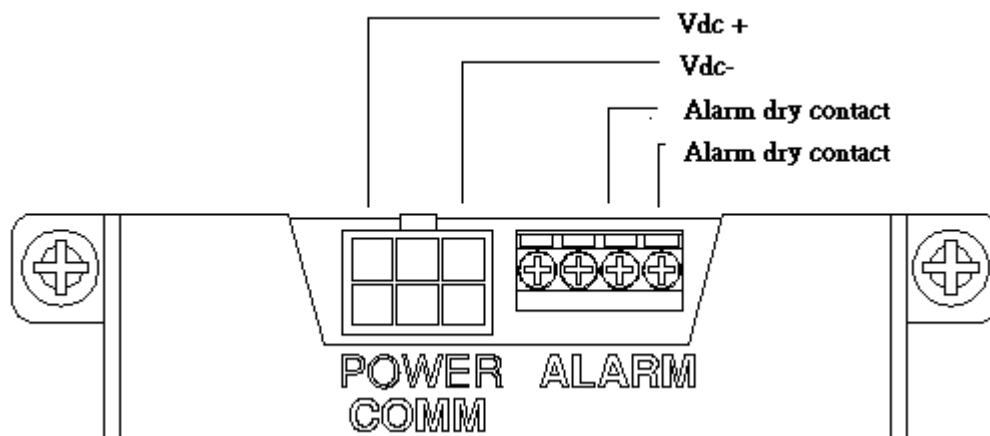
(Orange) : HET200PB work in heating mode

(Dark): HET200PB TEC function OFF

■ CLEAN/TEST

There is a auto test button on HET200PB, user can press this button to run HET200PB heating and cooling process, the process is about 3~4 mints. User can turn off this function by pressing this button again.

*:HET200PB will detect internal fan income air temperature and sink surface temperature, It will compare two temperature to determine TEC is normal or not.



Alarm dry contact:

- Pin to pin "Open":
Normal
- Pin to pin "Close":
Fan , TEC or sensor failed

Connector "Alarm"

Pin to Pin ----- MAX. (± 75VDC) 50mA

Part no. :

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3. Environmental conditions

3-1. Operating temperature :

-40°C ~ +55°C (14°F ~ 149°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.

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

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4. Certified safety

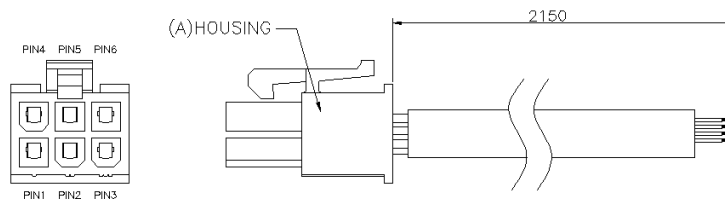
4-1. Mark



5. User cable

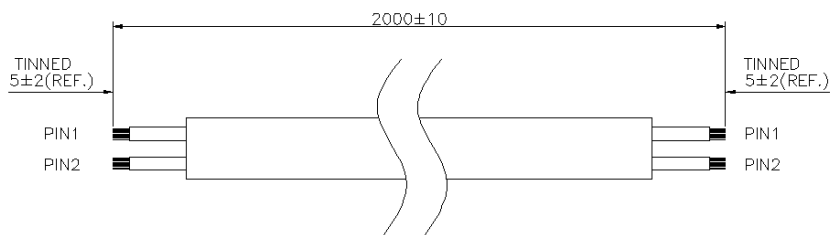
Each HET200PB will provide 2 cables with shipment.

5-1 Power cable



PINOULTS			
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	

5-2 Alarm cable



PINOULTS		
Wire	CABLE WIRE COLOR	CABLE WIRE TYPE
PIN 1	BROWN	UL 1061 AWG#22
PIN 2	BLUE	