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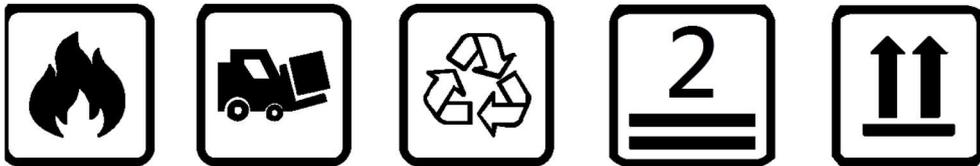
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Description

This document is an installation and the characteristics of Delta HEX200PE-D01. 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

HEX is a precision instrument, it should be handled or transported with care, do not stand on the box, or place heavy objects on it. Please pay attention to the following icons on the package.



Safety Notes

Please read the safety notes carefully before installing HEX unit and be sure to install it correctly. After completing the installation, make sure that the unit operates properly during the start-up operation.

Meaning of WARNING and CAUTION notices:

⚠ Warning:

Failure to follow these instructions properly may result in personal injury or loss life.

⚠ Caution:

Failure to observe these instructions properly may result in property damage or personal injury, which may be serious depending on the circumstance.

⚠ Warning:

1. Installation work and electrical wiring must be done by qualified person(s) in accordance with all applicable codes, standards and national wiring regulations.
2. Use this unit only in the manner intended by the manufacturer. If you have questions, please contact the manufacturer.

Install the HEX in accordance with the instructions in this installation manual. Improper installation may result in water leakage, electric shocks or fire.

3. Make sure that all wiring is secured, the specified wires are used, and there is no strain on the terminal connections or wires.
4. If refrigerant gas leaks during installation, ventilate the area immediately. Do not directly touch refrigerant that has leaked from refrigerant pipes or other areas, as there is a danger of frostbite.
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 for installation work.
8. This appliance is intended to be used by expert or trained users in shops, in light industry and on farms, or for commercial use by lay persons”.

 Caution :

1. Install the HEX on a wall/ door strong enough to withstand the weight of the unit.
2. Do not allow a child to mount on the outdoor unit or avoid placing any object on it.
3. Do not block air inlets or exits.
4. Do not install the HEX at any place where there is a danger or flammable gas leakage.
5. To avoid injury, do not touch the air inlet or aluminum fins of unit.
6. Watch your steps at the time of fin cleaning or HEX inspection.
7. The appliance is not to be used 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.
8. Children being supervised not to play with the appliance.

Specification for Approval

Customer : STD

Description : Heat Exchanger 260 W/K

Customer P/N :

Rev. :

Delta model no. : HEX260PB

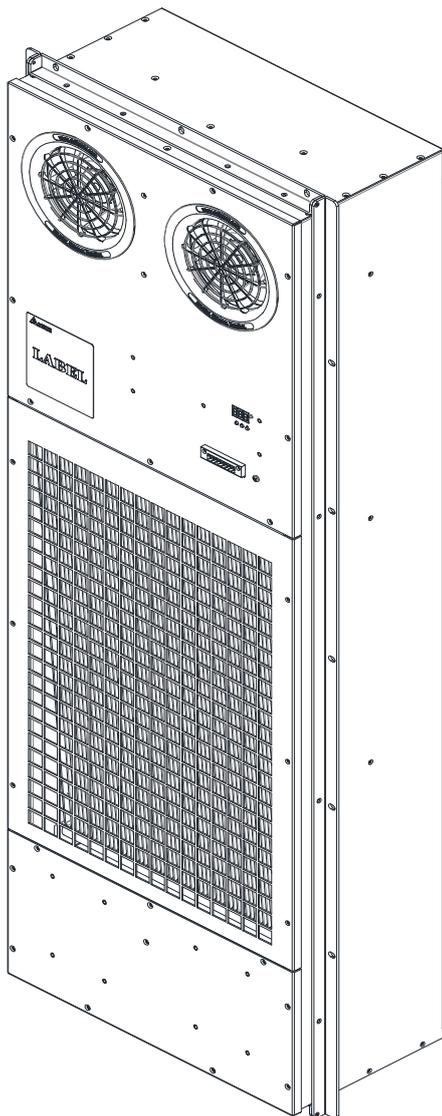
Rev. : 02

Sample revision. :

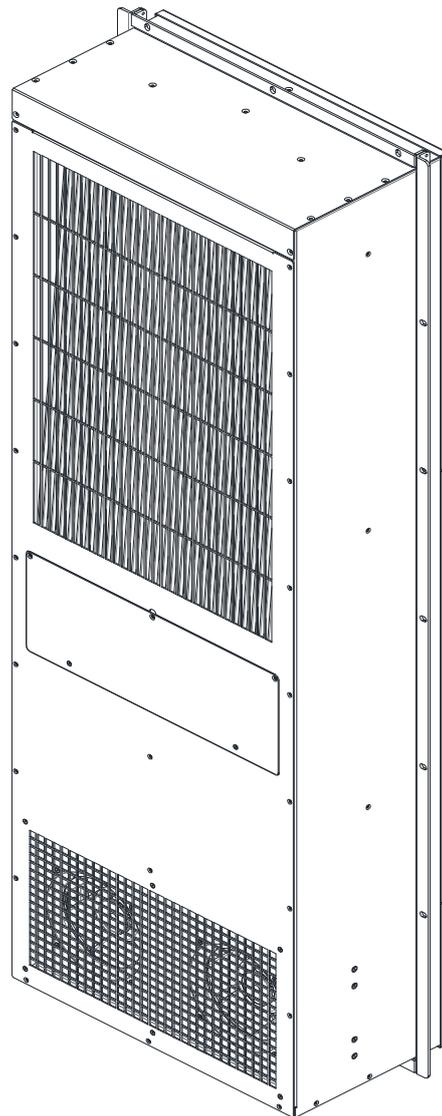
Date Code :

Sample issue date : MARCH.07.2022

Quantity :



INTERNAL



EXTERNAL

Part no. :

Delta model no. : HEX260PB

1. Product Instruction

1-1. General Description

The Heat Exchanger (HEX) is designed for direct air to air heat exchange to remove the heat from the cabinet, and there is designed for IP55 sealed outdoor telecom cabinet to provide stable and optimum internal conditions for equipment and avoid hotspot inside the cabinet. It is easy to be installed in the cabinet with the nuts.

The internal and the external air circulation loops of the HEX are separated to prevent the introduction of dust, humidity and dirt. The fan on the external air loop conforms to IP55 protection rating.

1-2. Main Feature & Model Number

Dimensions, Weight & Mounting method		
Dimension (H x W x D) (without flange)	mm	1330 x 425 x 230
Application		Outdoor
Weight	Kg	36.0
Mounting Method		Door/Side
Color (optional)		RAL7032
Environmental Protection & Performance		
Operating Temperature Range	°C	-20 to +65
Refrigerant		R134a
Protection for Dust ,Wind and Water (External)	IEC 60529	IP55
Noise (1.5m)	dB-A	72
Operating Status	N/A	LED Indicator / Display Board
Cooling Capacity & Operational Data		
Rated Cooling Capacity	W/K	260+/-10%
Rated Current	A	10.0
Rated Internal Airflow	CMH	1150
Rated External Airflow	CMH	1250
Power & Range		
Input Voltage	VDC	48
Max. Operating DC Current	A	8.4
Alarm	N/A	Dry Contact Output
Key Components		
Controller		Built-in Smart Controller
Fans		Delta High Efficiency Blowers

*Note 1 : The cooling capacity (W/K or W/°C) is defined as $Q / (TI-TA)$

Q : Heat dissipation (W) from inside of cabinet

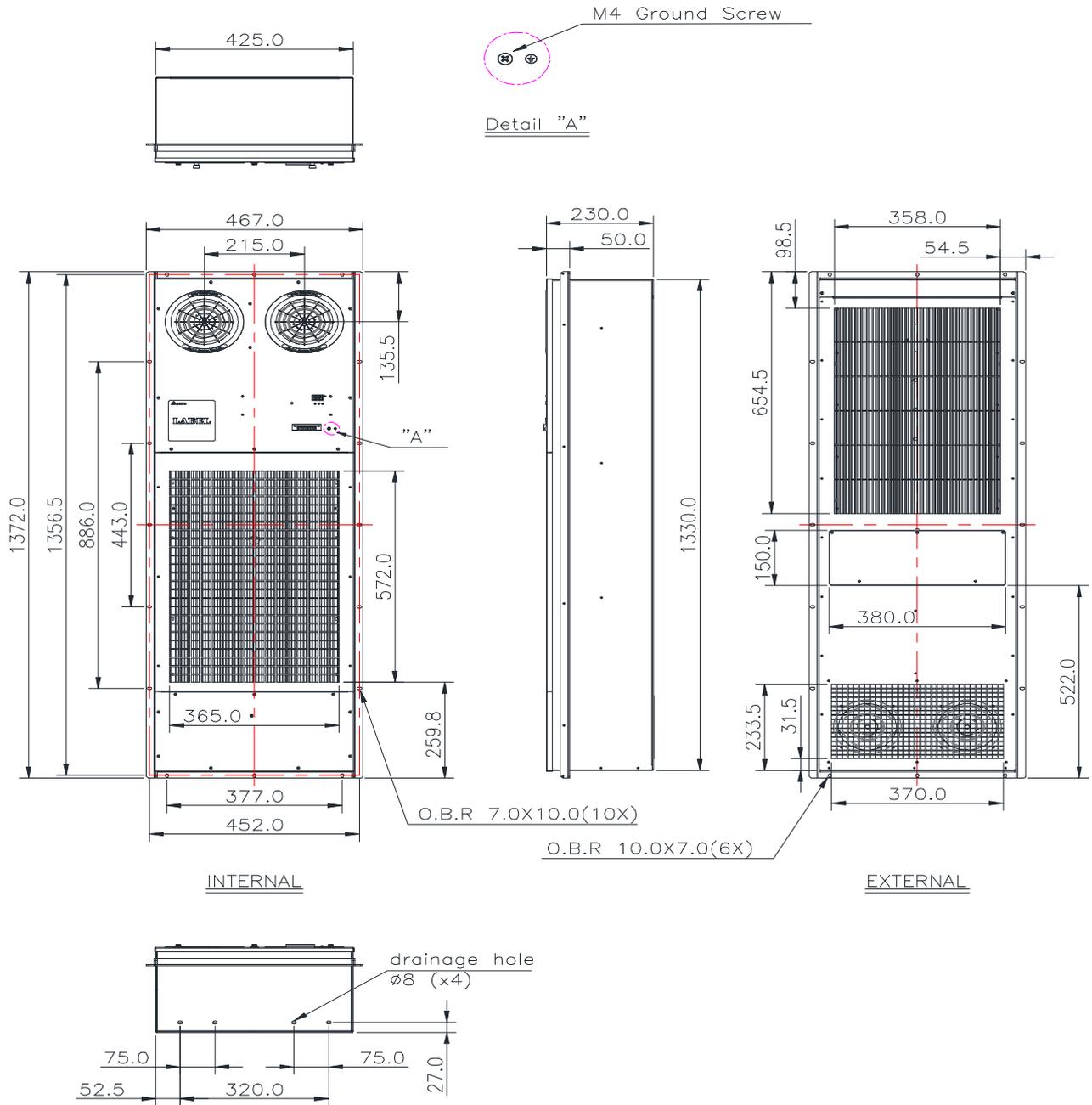
TI : Return temperature of internal air circuit (K OR °C)

TA : Ambient temperature of external air circuit (K OR °C)

Part no. :

Delta model no. : HEX260PB

1-3. Dimension



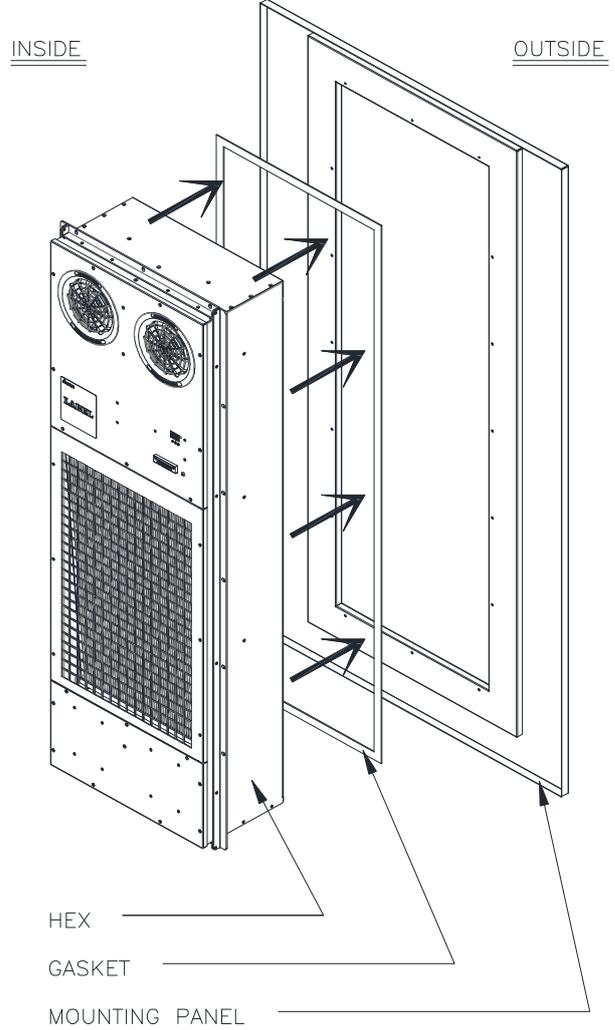
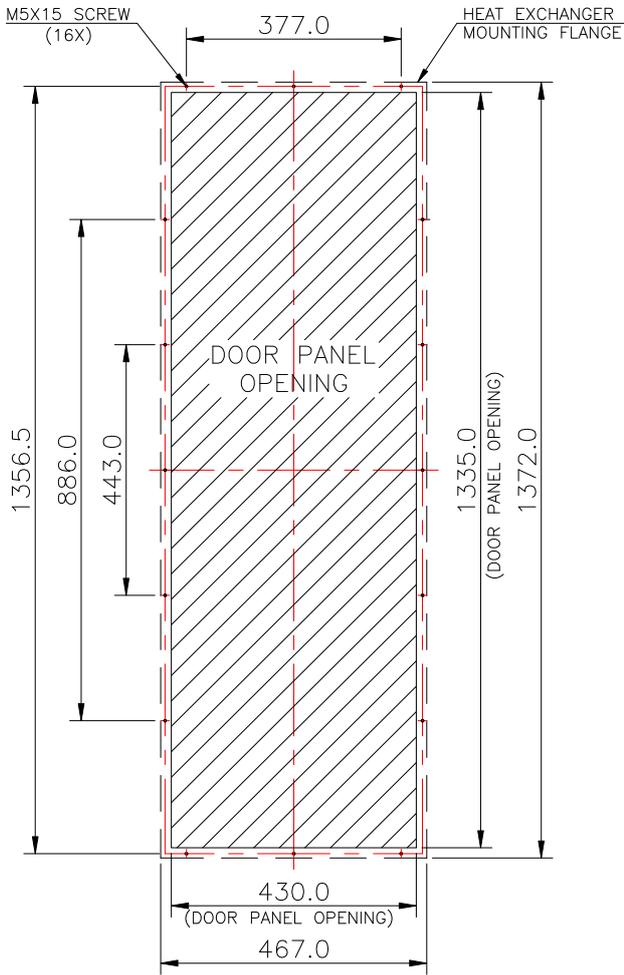
Unit: (mm)

- (1) Material: Case AL5052 sheet metal , t=1.5mm.
- (2) Finish: Powder coating 75~120 μ m, Color RAL 7032.
- (3) Dimensional Tolerance: \pm 1mm [0.04"]

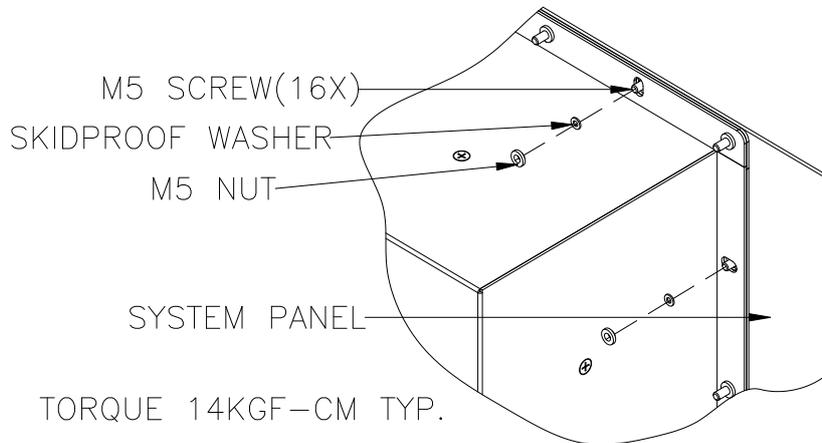
Part no. :

Delta model no. : HEX260PB

1-4. Mounting Panel Cutout



* VIEW ORIENTATION :
FROM OUTSIDE OF DOOR PANEL
* TOLERANCE : ±0.5MM

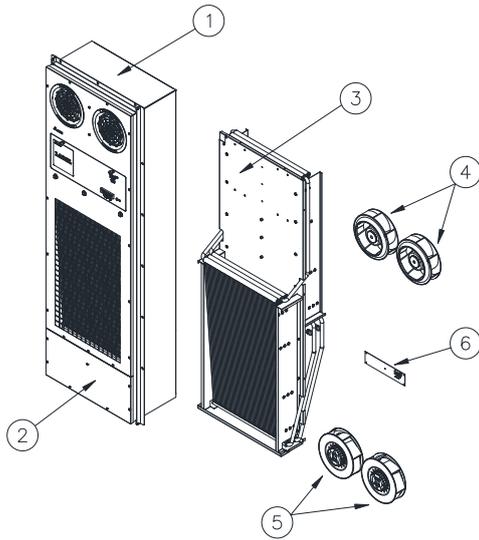


Part no. :

Delta model no. : HEX260PB

1-5. Configuration & Maintenance

Make sure the HEX surface sealed with mounting flange to avoid water penetrates into shelter through mounting interface. It is suggested to use gaskets sticking on the mounting flange and seal the gap between flange and cabinet with silicone gel during installation. There should be **NO** any gap surround gaskets to avoid water penetrates into enclosure.



NO.	Q'TY	DESCRIPTION
1	1	Case Chassis
2	1	Case Cover
3	1	Heat Exchanger
4	2	Internal Fan (TCA1748ATAGPC0U)
5	2	External Fan (TCA1748ATAGPC0T)
6	1	Power Board

In order to assure the HEX running at optimal condition, the condenser should be cleaned once annually at least; user can clean the condenser with water directly. The external side fan blade can also be cleaned with normal pressure water if there is dust accumulation. Please do not use strong water jet to impact the center of fan and the surface of condenser.

The bottom hole of the heat exchangers is used for drainage, please clear drain holes when the maintenance. Please also notice that following:

1. Check wires are connected correctly, and the insulation is not cracking or broken.
2. Use Self-test to check the unit running correctly or not. And the supplied air of internal side should be as cooled air.
3. Do not wipe the product with organic solvent, volatile substances like toluene or gasoline, it will destroy the powder-coated surface.
4. Turn off the power before maintaining.
5. Please turn off power and remove dry contact connector while non-operating for a long time.
6. If any abnormal acoustic noise from HEX happened, please turn off the product and contact with customer services.

Part no. :

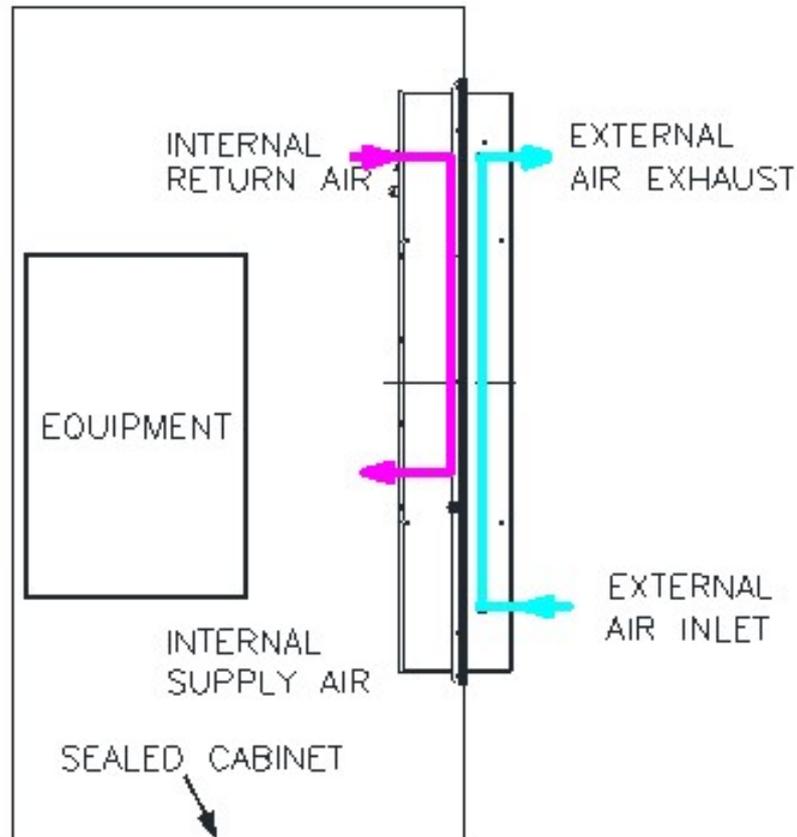
Delta model no. : HEX260PB

7. The refrigerant is environmental friendly product of R134a. Little refrigerant leakage (< 5 g/ year) is allowed for application. If refrigerant leakage seriously, please turn off the power and wait for at least 2 hours to make sure the refrigerant fully exhaust. Please also contact the services to replace spare parts.

1-6. Thermal and Airflow

The internal and external air flow circulation is shown as the figure. Through separated mechanism design, internal and external air flow won't be mixed since the waste heat can be dissipated from the cabinet to the ambience. Internal temperature sensor is placed at return air stream to provide reliable temperature measurement and safety of operation.

The waste heat generated from the internal equipment will be absorbed by the refrigerant through the evaporator and dissipate to the ambience by the condenser of external side.



Part no. :

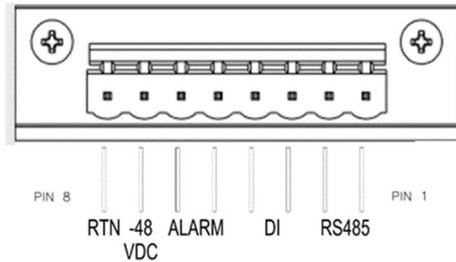
Delta model no. : HEX260PB

2. Electrical Specification

2-1. Indicator & Connector

➤ Power input & signal connector

Pin	Description	Cable wire size
1	RS485A	24 AWG
2	RS485B	24 AWG
3	DI	24 AWG
4	DI	24 AWG
5	Alarm	24 AWG
6	Alarm	24 AWG
7	-48 VDC	16 AWG
8	RTN	16 AWG



Note: DI is thermosiphon shutdown input. It is electric sensitivity and should be only connect a dry contact without any electric input for avoiding control board damaged.

- Pin3,Pin4 DI alarm (DI output 3.3V/0.3mA typ,)
- Pin3,Pin4 Close: DI alarm
- Pin3,Pin4 Open: normal
- Pin5,Pin6 Alarm contact (Contact rating: 2A@30VDC)

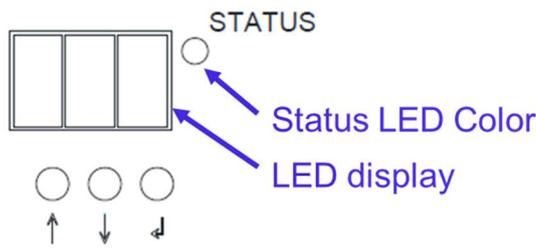
Dry-contact output	
normal	any alarm happen or DC input supply fail
Common (C) / Normally Open (NO)	Common (C) / Normally Closed (NC)

- Specification:
- Normal:
PIN 5 and PIN 6 dry contact output open
- Any alarms happening or power off:
PIN 5 and PIN 6 dry contact output close

Part no. :

Delta model no. : HEX260PB

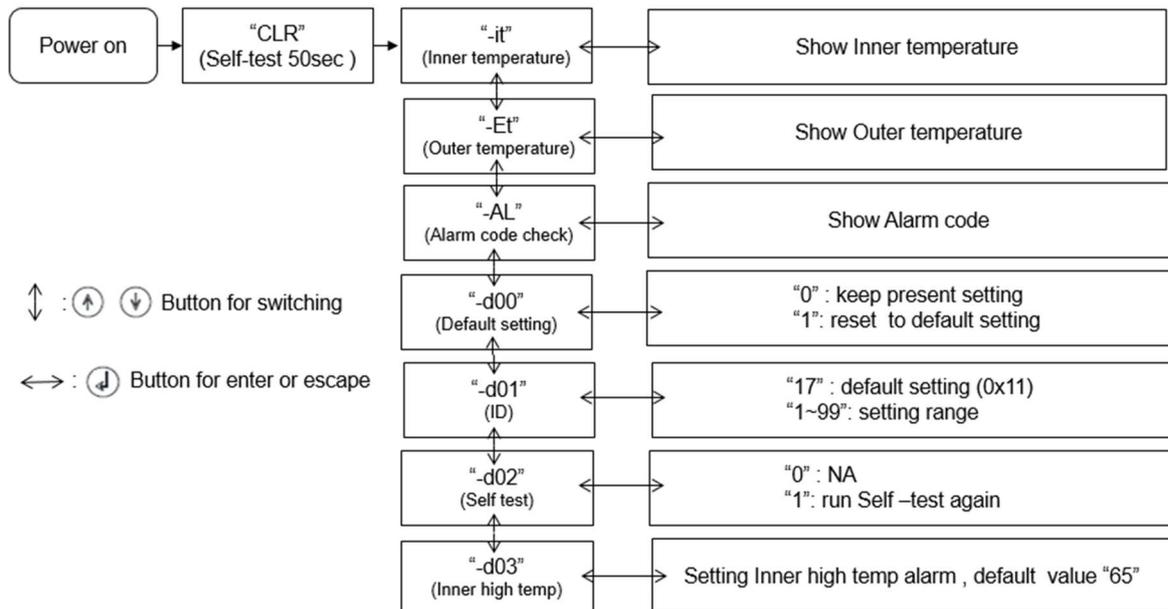
➤ Panel operation



	7-Segment Display
◎ STATUS	Status LED
↑	Up
↓	Down
←	Parametric Setup

Status LED Color	status
Green	HEX normal
Blanking Red	Fan fail, Temp Sensor fail or Inner temp >65°C
Dark	Power off or control board fail

While power on, HEX fan will run high speed about 50sec for self-test, and status LED will blank green or red light for self- test status. The LED display and but ton operation is as bellow:



Part no. :

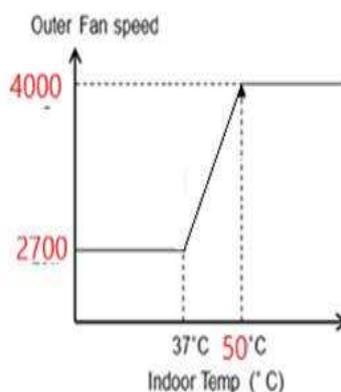
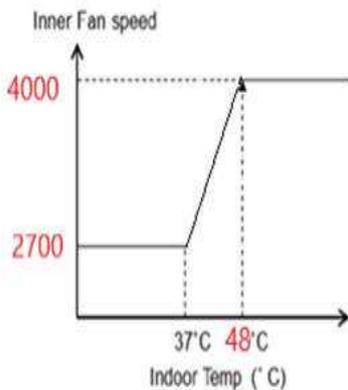
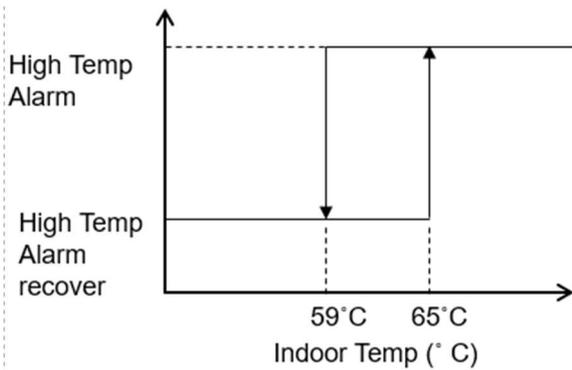
Delta model no. : HEX260PB

➤ Alarm code

Into LED display function “-AL”, it will show the fail mode for user checking HEX status.

Fail Mode	Alarm code	Note
Inner Fan 1 alarm	E.1.1	Other Inner Fan run high speed
Inner Fan 2 alarm	E.1.2	Other Inner Fan run high speed
Outer Fan 1 alarm	E.2.1	Other Outer Fan run high speed
Outer Fan 2 alarm	E.2.2	Other Outer Fan run high speed
Indoor Temp sensor alarm	E.3.1	All fan high speed
Outdoor Temp sensor alarm	E.3.2	All fan high speed
High Indoor Temp (default> 65°C)	E.3.3	All fan high speed
Thermosiphon Shutdown DI alarm	E.4.1	Inner Fan & Outer stop

2-2. Control curve



High speed: 4000RPM

Low speed: 2700RPM

Part no. :

Delta model no. : HEX260PB

3. Environmental Condition

3-1. Operating Temperature

-20 °C ~ +65 °C (-4 °F ~ 149 °F)

3-2. Storage Temperature

-40 °C ~ +70 °C (-40 °F ~ 158 °F)

3-3. Operation Humidity

External air loop: 0 ~ 100 % RH

Internal air loop: 0 ~ 80 % RH, non-condensing

3-4. Ingress Protection Rating

IP55 (IEC60529) on external side

GR487 on external side

4. Reliability Table

Test item	Condition
High temperature	IEC 60068-2-2
Low temperature	IEC 60068-2-1
High temp. / High humidity	IEC 60068-2-3
Temperature cycle	IEC 60068-2-14 test Nb
Vibration	ETSI 300 019-1-4 CLASS 4.1
Ingress protection (external side)	IEC 60529 IP55 / GR487
Salt fog test (external side)	IEC 60068-2-11 severity 4 , 6cycles
Package bump	IEC 60068-2-29

5. Safety Certification

5-1. UL, CUL, TUV, CE



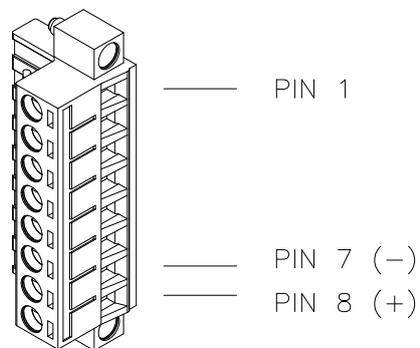
Part no. :

Delta model no. : HEX260PB

6. Accessory

➤ Power and Alarm Cable

Pin	Description	Cable wire size
1	RS485 A	24 AWG
2	RS485 B	24 AWG
3	GND	24 AWG
4	---	---
5	ALRAM COM	24 AWG
6	ALRAM NC	24 AWG
7	-48 VDC	16 AWG
8	RTN	16 AWG

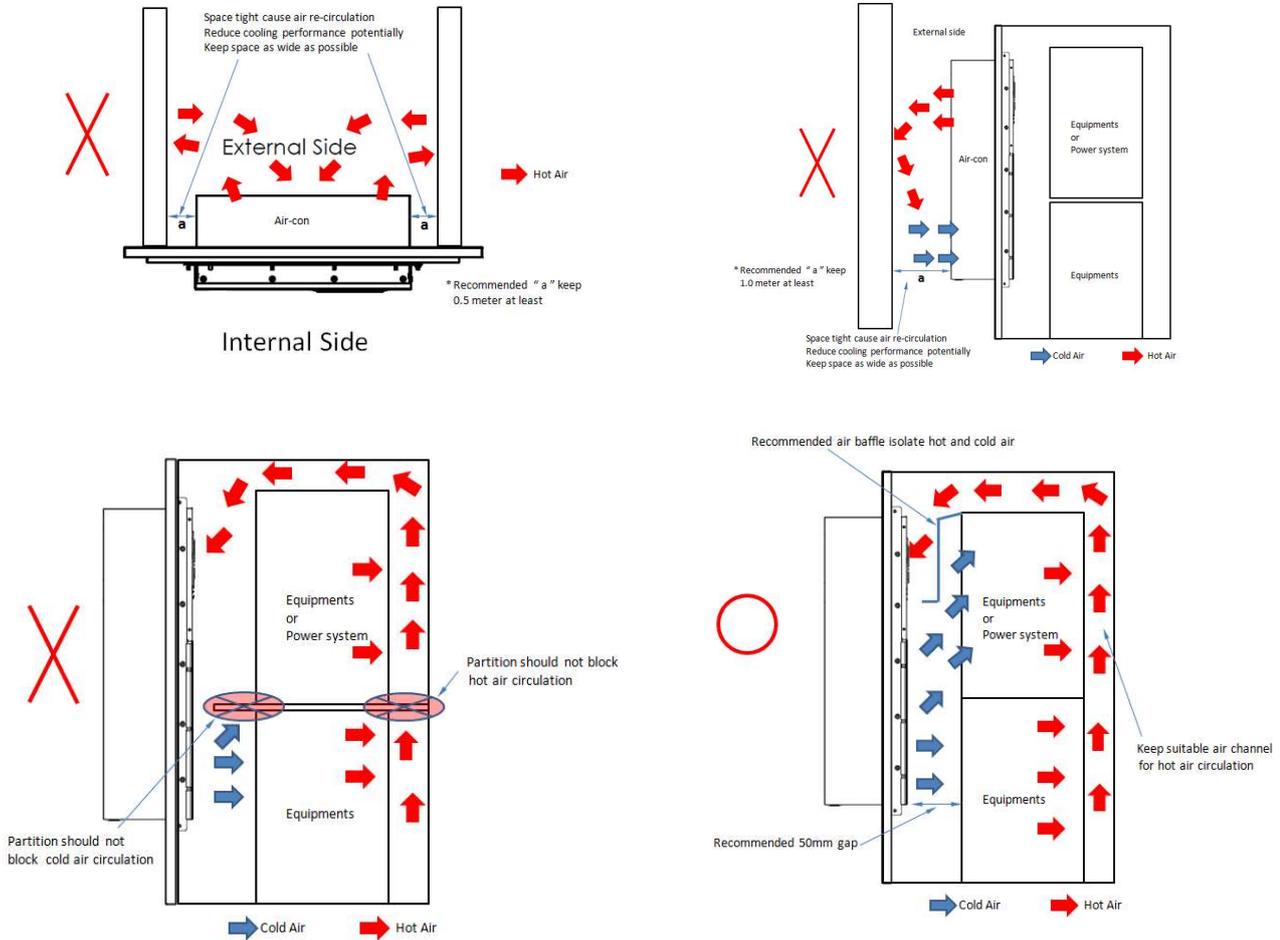


Part no. :

Delta model no. : HEX260PB

7. Installation Notice

Check the surrounding obstacles to make sure the product get enough space for air circulate.



8. 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.

Part no. :

Delta model no. : HEX260PB

9. Versions

REV.	DESCRIPTION	DRAWN	CHECKED			APPROVED	ISSUE DATE
			ME	EE	CE		
00	ISSUE SPEC	黃威智 09/06'19	黃威智	涂雅森	---	陳加偉	09/06'19
01	MODIFY SHEET METAL FEATURE OF EXTERNAL AIR INLET	陳俊堯 06/10'21	陳俊堯	涂雅森	---	陳俊堯	06/10'21
02	ADD THE SAFETY CERTIFICATION	鄭宇智 03/07'22	鄭宇智	涂雅森	---	陳俊堯	03/07'22