



Specification and Manual

Customer : _____
Description : Heat Exchanger 15 W/K
Customer Part No. : _____ Rev.: _____
Delta Model No. : HEX015PA Rev : 01
Sample Date Code: _____
Sample Issue Date : April.17.2024

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 HEX015PA. 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. Do not topple the HEX while moving or storage.
8. 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.
9. Children being supervised not to play with the appliance.

Specification for Approval

Customer :

Description : Heat Exchanger 15 W/K

Customer P/N :

Rev. :

Delta model no. : HEX015PA

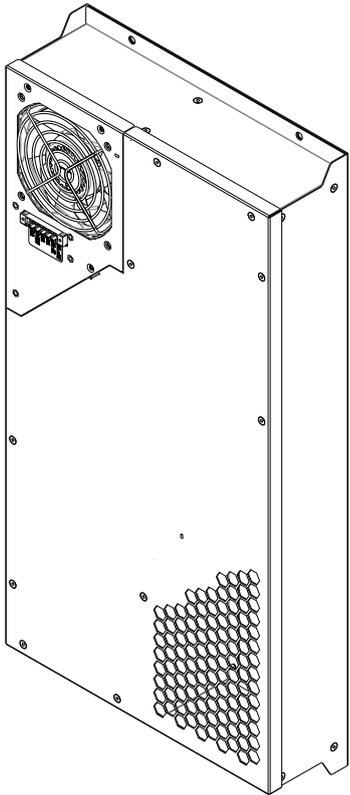
Rev. : 01

Sample revision. :

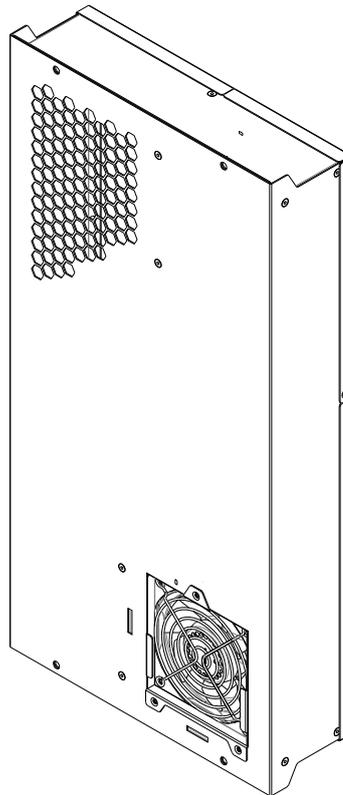
Date Code :

Sample issue date :

Quantity :



INTERNAL



EXTERNAL

Part no. :

Delta model no. : HEX015PA

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	510 x 253 x 78
Application	N/A	outdoor
Weight	Kg	5.0 (ref)
Mounting Method	N/A	Door /Side
Environmental Protection & Performance		
Operating Temperature Range	°C	-10 to +65 (ice-free)
Protection for Dust ,Wind and Water (External)	IEC 60529	IP55
Noise (1.5m)	dB-A	62
Operational Data		
Operation Voltage Range	VDC	DC 40- 60V (TYP.)
Input Voltage	VDC	DC48V (TYP.)
Rated Cooling Capacity	W/K	15
Operation Cooling Current	A	0.55
Operation Power	W	32 (MAX)

*Note 1 : The cooling capacity (W/K or W/°C) is defined as

$$Q / (T_I - T_A)$$

Q : Heat dissipation (W) from inside of cabinet

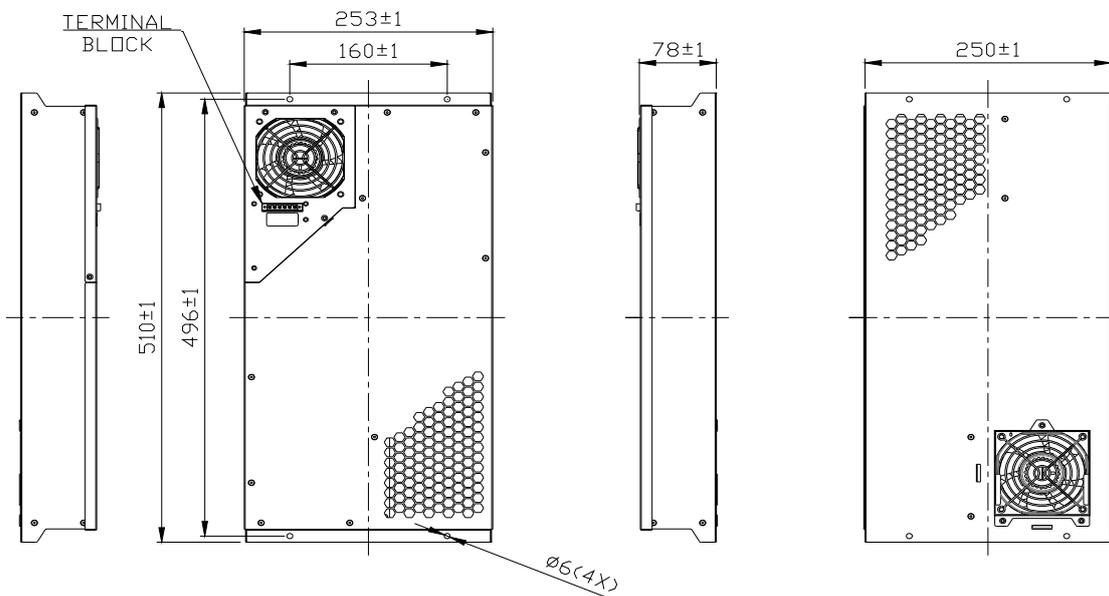
T_I : Return temperature of internal air circuit (K OR °C)

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

Part no. :

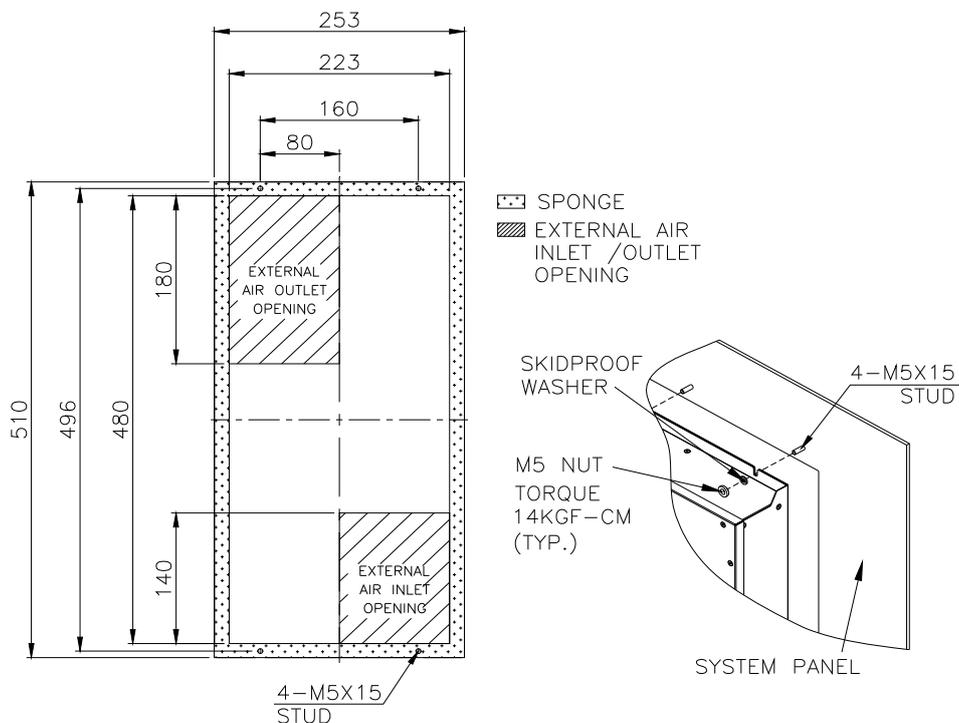
Delta model no. : HEX015PA

1-3. Dimension



- (1) Material: Case SGCC sheet t=0.8mm+ power coating
- (2) Dimensional Tolerance: $\pm 1.0\text{mm}$ [0.04"]
- (3) Colors: RAL7035
- (4) Unit: mm

1-4. Mounting Panel Cutout



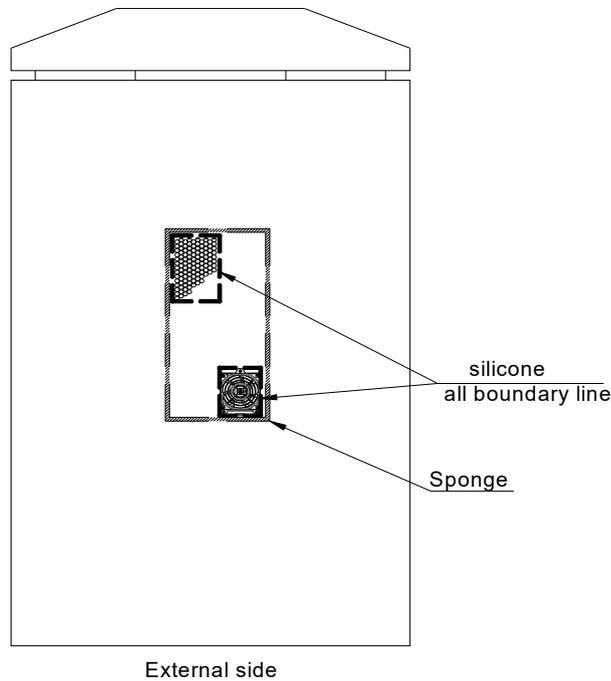
Dimensional Tolerance: $\pm 1.0\text{mm}$ [0.04"]

Part no. :

Delta model no. : HEX015PA

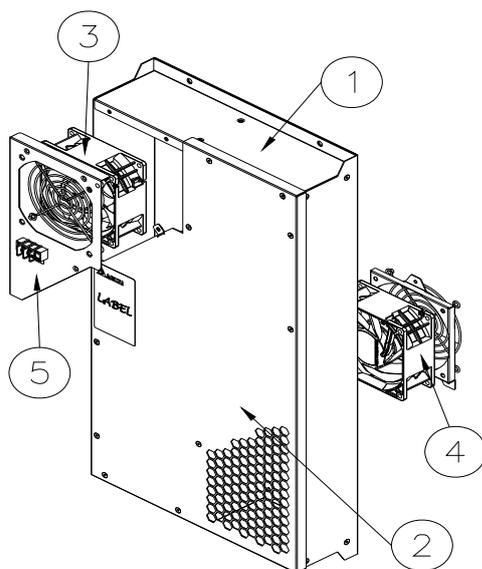
1-5. Smear waterproof layer

Take silicone to smear the gap at all boundary line of heat exchanger.



1-6. 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.



ITEM	Q'TY	DESCRIPTION
1	1	Chassis
2	1	Heat exchange CORE
3	1	Internal fan tray
4	1	External fan tray
5	1	Controller

Part no. :

Delta model no. : HEX015PA

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.

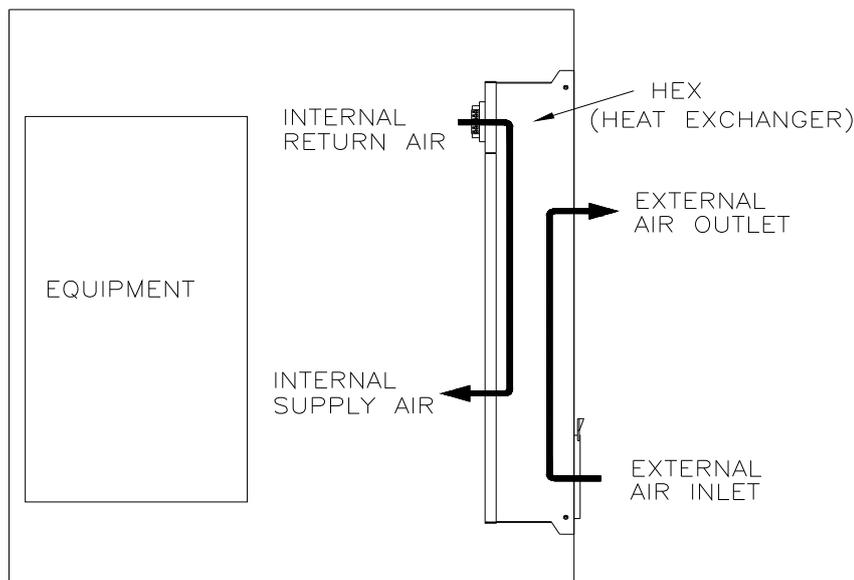
The bottom hole of the heat exchangers is used for drainage, please clear drain holes when the maintenance. Please also notice that following:

1. Check wires are connected correctly, and the insulation is not cracking or broken.
2. Do not wipe the product with organic solvent, volatile substances like toluene or gasoline, it will destroy the powder-coated surface.
3. Turn off the power before maintaining.
4. Please turn off power and remove dry contact connector while non-operating for a long time.
5. If any abnormal acoustic noise from HEX happened, please turn off the product and contact with customer services.

1-7. 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. :

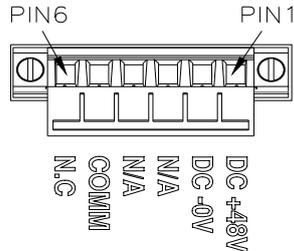
Delta model no. : HEX015PA

2. Electrical Specification

2-1. Connector

On panel: Dinkle 2EHDRM-06P

Mate with : Dinkle 2ESDPLM-06P



PIN	FUNCTION
1	+48VDC
2	-0V
3	N/A
4	N/A
5	ALARM CONTACT
6	ALARM CONTACT

PIN ASSIGNMENT

PIN5 & PIN6 alarm contact (N.C)

	Alarm logic
Power on and Fan normal	Close
Power off or Fan lock	Open

Dry contact rating: **MAX 75VDC/50mA**

3. Environmental Condition

3-1. Operating Temperature

-10 °C ~ +65 °C (14 °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 ~ 95 % RH, non-condensing

3-4. Ingress Protection Rating

IP55 (IEC60529) on external side

3-5. MTBF

The L10 Fan life is expected to be at least 70,000 hours continuous operation at 40°C with 15 ~ 65%RH .@ label rated voltage

Part no. :

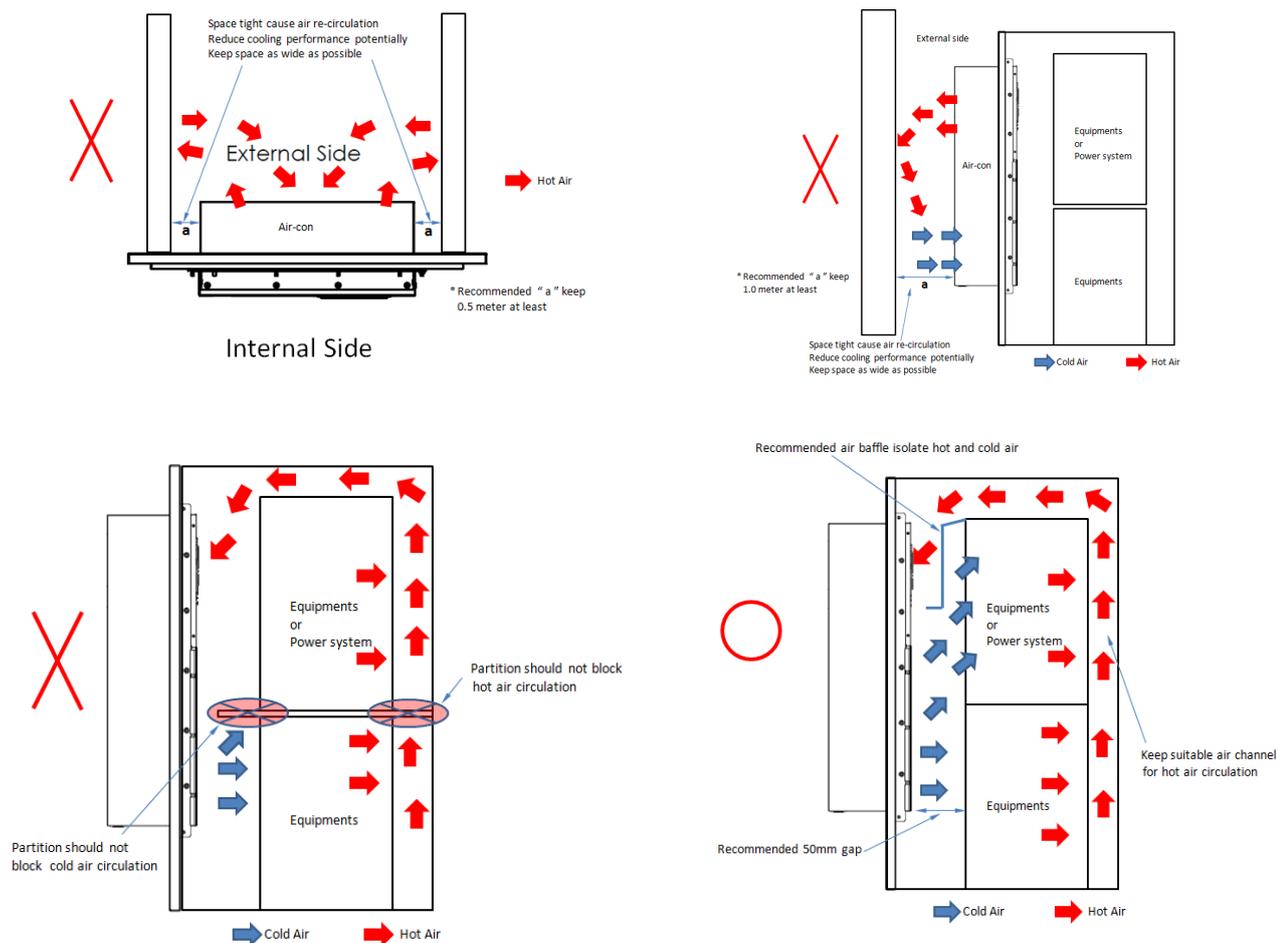
Delta model no. : HEX015PA

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
Salt fog test (External side)	GR-487 3.38.1
Package bump	IEC 60068-2-29

6. Installation Notice

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



Part no. :

Delta model no. : HEX015PA

7. Warranty

Delta Electronics, Inc. Warranty for Cabinet Thermal Solutions Products

Delta Electronics, Inc warrants that all Heat Exchangers, Air Conditioners, Heaters, Thermoelectric Coolers and related products and accessories within its Cabinet Thermal Solutions product family and manufactured by Delta Electronics, Inc., herein referred to as (“products”), will be free from defects in material and workmanship for a period of one (1) year from the date of shipment by Delta Electronics, Inc. This warranty covers repair or replacement of product at the sole discretion of Delta Electronics, Inc. and is subject to the following Conditions and Exclusions:

A. Conditions.

- All products must be installed and operated according to Delta product Specification(s) and product Instruction/User Manual(s):
- Maximum voltage variation is no greater than normal operation and instruction in Delta product Specification(s) and product Instruction/User Manual(s), with avoidance to power line disturbances of any kind.
- Application is not to exceed minimum and maximum stated operation temperatures and humidity range as indicated in the Delta product Specification(s) and product Instruction/User Manual(s).
- Filters (if applicable) must be cleaned regularly.
- Products and any parts thereof must not be modified, unless prior written authorization is received from Delta Electronics, Inc.
- All products must be installed and grounded in accordance with all relevant electrical and safety codes, as well as the National Electric Code and OSHA rules and regulations.
- All products must be installed in a stationery application, free of vibration and shock.
- A violation of any one of these conditions shall render the warranty hereunder void and of no effect.

Part no. :

Delta model no. : HEX015PA

B. Exclusions.

This warranty does not cover the following:

- Applications where products are being misapplied. This includes inappropriate selection of products for the environment and conditions in which it is to be used.
- Damages caused by shipping carrier or any other accident after products have left Delta Electronics, Inc. manufacturing facility. Shipping claims are the responsibility of the customer and are to be completed in a timely manner.
- Reimbursement of labor for installation or removal of any warranted products, or for parts and labor resulting from repairs performed by any other source besides Delta Electronics, Inc.

This is the complete warranty and is in lieu of any other warranty expressed or implied, including but not limited to any implied warranty of merchantability or fitness for a particular purpose. Delta Electronics, Inc. will in no way be liable for incidental or consequential damage whatsoever or for any other claims by the customer for damages in connection with Delta Electronics Inc. products, even if advised in advance of the possibility of such damage.

Return Procedure

All returns require a Return Material Authorization number (RMA #), regardless of reason for return, whether it be for warranty or out of warranty repair. Returns without an RMA # will be refused by Delta Electronics, Inc. Approval for return requests are at the sole discretion of Delta Electronics, Inc.

Buyer should provide the following information at the time of RMA request:

1. Complete Model Number, Serial Number and description of damaged unit requested to be returned.
2. Original Buyer Purchase Order number and date product was received by Buyer.
3. Quantity to be returned and a brief description of failure for each unit, if different.

All returns to Delta Electronics, Inc must be securely packed, using original cartons if possible. All returns must have the RMA number visible on the outside of the carton. Delta Electronics, Inc. is not responsible for material damaged in transit.

Shipping cost for all non-warranty repairs is the responsibility of the sender and must be shipped prepaid. Shipping costs for all warranty related repairs will be covered by Delta Electronics, Inc. provided the products are returned using a Delta Electronics, Inc approved carrier. If after diagnosis, products determined by Delta Electronics, Inc. are not covered under warranty, Buyer will be responsible for all shipping charges and will be billed accordingly.

Part no. :

Delta model no. : HEX015PA

LIMITATION OF LIABILITY

DELTA ELECTRONICS, INC. WILL NOT BE LIABLE UNDER ANY CIRCUMSTANCES FOR ANY INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES, INCLUDING WITHOUT LIMITATION ANY LOST PROFITS OR LABOR COSTS, ARISING FROM THE SALE, USE OR INSTALLATION OF THE GOODS, FROM THE PRODUCTS BEING INCORPORATED INTO OR BECOMING A COMPONENT OF ANOTHER PRODUCT, FROM ANY BREACH OF THIS AGREEMENT OR FROM ANY OTHER CAUSE WHATSOEVER, WHETHER BASED ON WARRANTY (EXPRESSED OR IMPLIED) OR OTHERWISE BASED ON CONTRACT, OR ON TORT OR OTHER THEORY OF LIABILITY, AND REGARDLESS OF ANY ADVICE OR REPRESENTATIONS THAT MAY HAVE BEEN RENDERED BY DELTA ELECTRONICS, INC. CONCERNING THE SALE, USE OR INSTALLATION OF THE PRODUCTS.

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.