



Specification For Approval

Customer : _____

Description : Heat Exchanger 99W/K

Customer Part No. : _____ Rev. : _____

Delta Model No. : HEX100PG Rev : 01

Sample Issue No. : _____

Sample Issue Date : July.17.2020

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

Approved by : _____

Date : _____

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Description : Heat Exchanger 99W/K

Customer P/N :

Rev. :

Delta model no. : HEX100PG

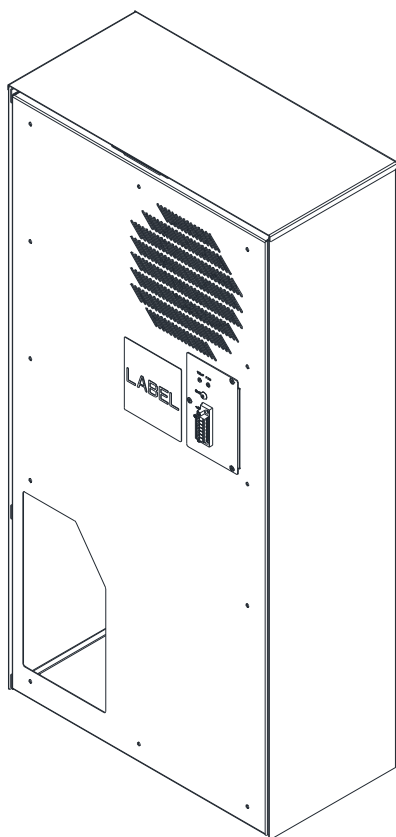
Rev. : 01

Sample revision. :

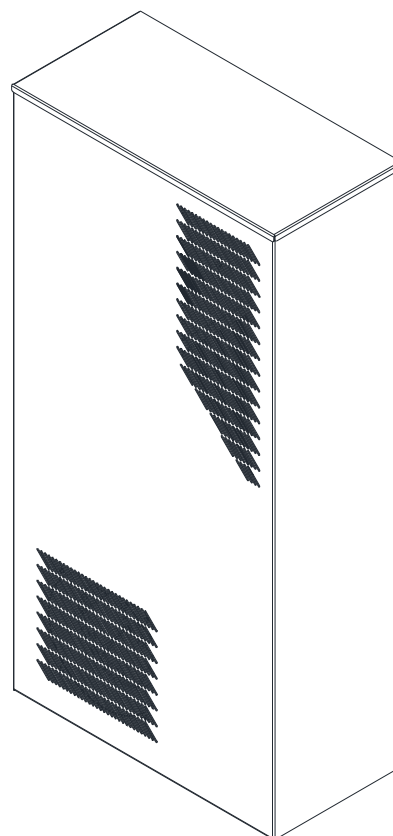
Issue no. :

Sample issue date : July.17.2020

Quantity : sets



Internal



External

Part no. :

Delta model no. : HEX100PG

1. Description

1-1. General description

The Heat Exchanger (HEX) is designed for direct air to air heat exchange to remove the heat from the cabinet.

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

Main feature	Unit	Model Number
		HEX100PG
Outline Dimension	mm (inch)	917H x 457W x 223D (36H x 18W x 8.8D)
Weight	Kg (lb)	27
Cooling (*Note 1)	W/K (W/°F)	99 (55)
Rated Voltage	VDC	48
Rated Current	A	6.0
Operating Voltage Range	VDC	40 - 60
Operating Current	A	4.3
Operating Power Consumption	W	206
Max.Ambient temperature	°C	65
Acoustic Noise (SPL) @ 1.5m	dB-A	69
Mounting Location	N/A	External Door

*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)

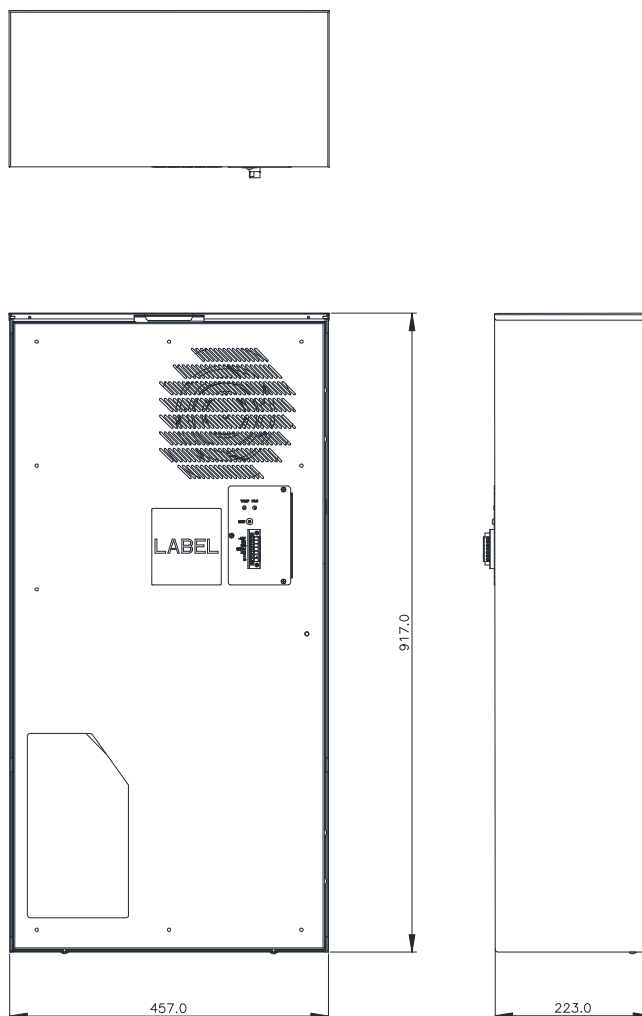
T_A : Ambient temperature of external air circuit (K OR °C)

Part no. :

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1-3. Dimension

1-3-1. Drawing



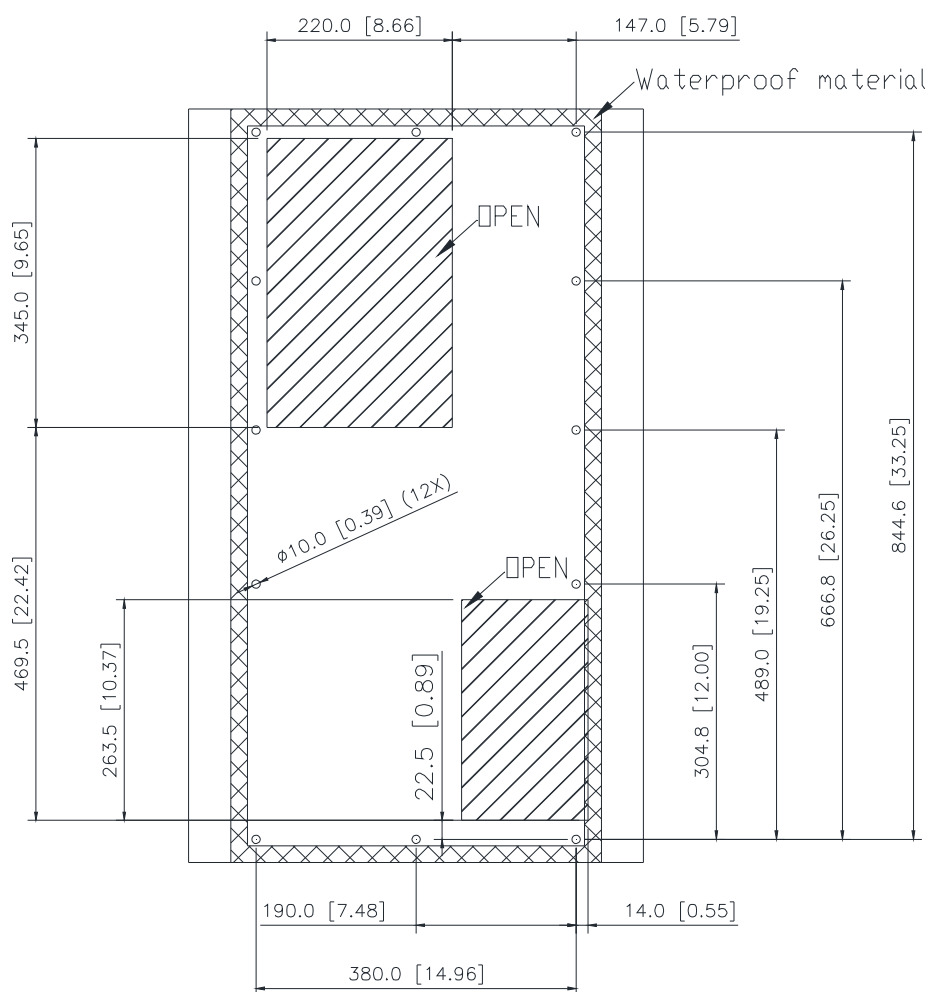
- (1) Material : Cover: SGCC sheet t=1.0mm;
Body: SGLC sheet t=1.0mm
- (2) Finish : Powder painting (protective cover only)
75um(min.), Color RAL 7035.
- (3) Dimensional tolerance : X.X [X.XX] : $\pm 1.0\text{mm}$ [0.04"]

Part no. :

Delta model no. : HEX100PG

1-3-2. Mounting panel cutout

Mounting hole at internal side



TOLERANCE : $\pm 0.5\text{MM}$

View from external side

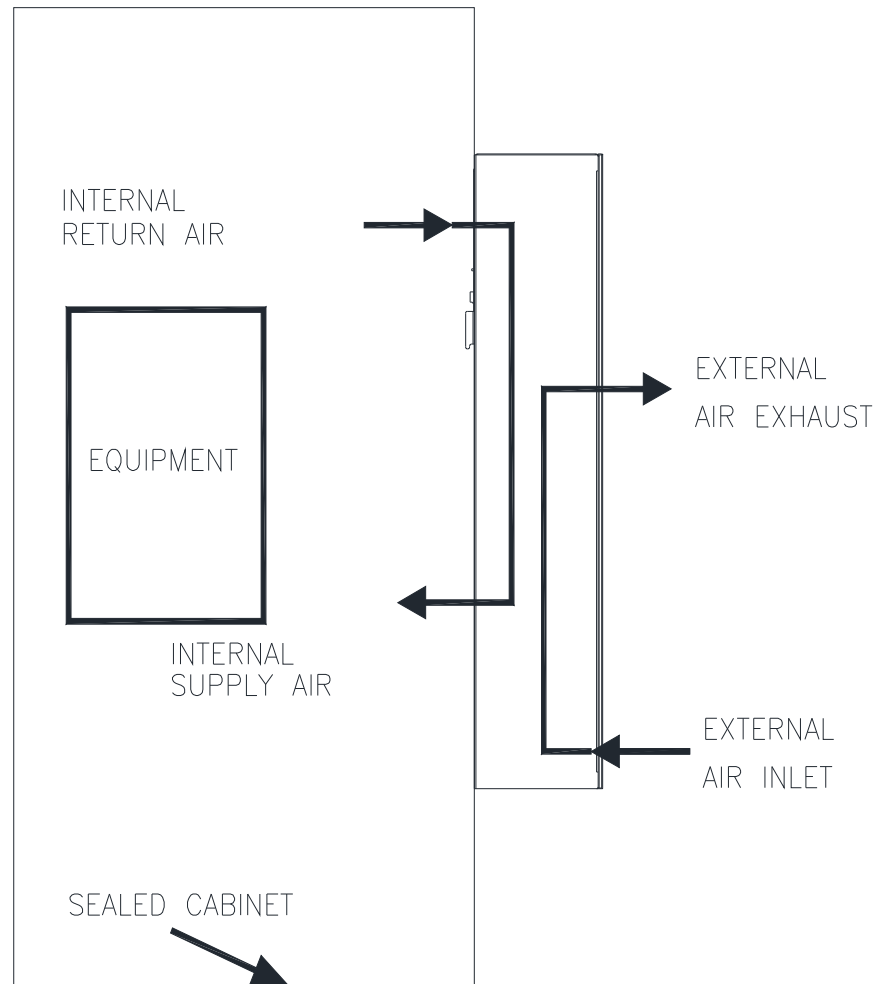
Part no. :

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1-4. Thermal path and Airflow baffle

With the forced convection using the centrifugall fan, the warm air generated by the equipment will be blowing into the internal return opening and pass though the HEX , then flow out from internal supply opening , the cold supply air will be used to cool down the system ; While on the opposite side, cooler air from the out environment will be drawn from the external air inlet side and bring the heat of the HEX out from the external air exhaust side.

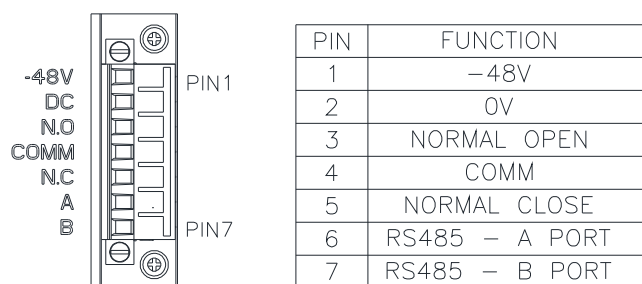
The thermal exchange path is shown in the figure below.



Part no. : _____
 Delta model no. : HEX100PG

2. Electrical specification

2-1. Indicator & Connector (HEX panel side)



Dry contact : (contact max. rating : 30VDC/400mA)

	Normal open	Normal close
Connection	Pin 3 & Pin 4	Pin 5 & Pin 4
Control board, NTC and fan are in normal status	OPEN	CLOSE
Power-off or control board is disabled	CLOSE	OPEN
NTC resistance is over range such as "open circuit" or "short circuit" or Inner temperature alarm ($\geq 65^{\circ}\text{C}$)	CLOSE	OPEN
Fan speed is lower than 50% of definition or fan locked	CLOSE	OPEN

LED indicator:

TEMP FAN



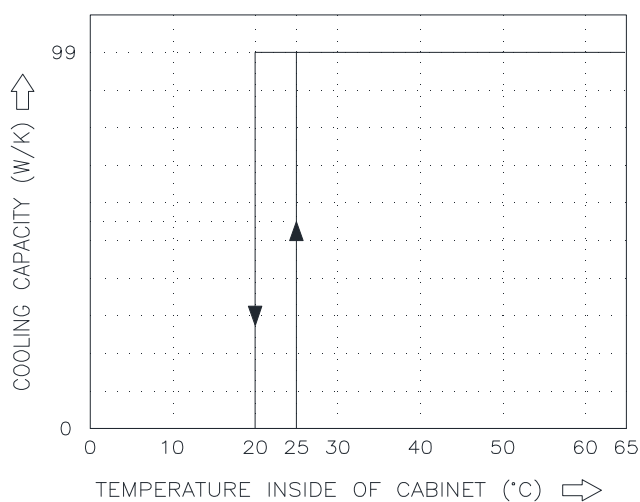
Part no. :

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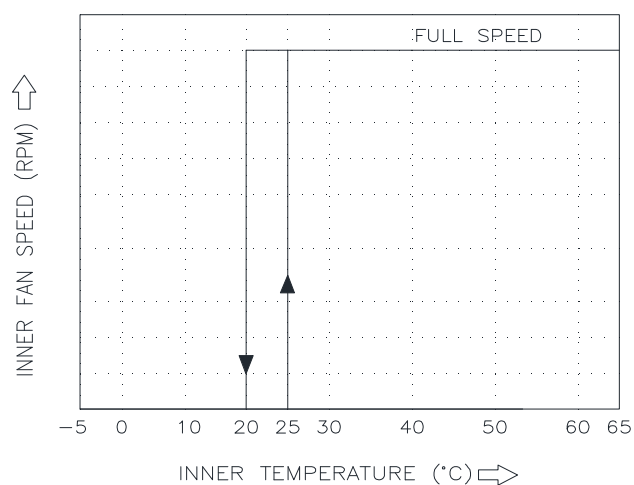
	FAN	TEMP
Fan normal, NTC normal and NTC sensor under 65°C	Green	Green
Fan fail	Red	Green
NTC fail or Inner temperature alarm ($\geq 65^{\circ}\text{C}$)	Green	Blanking Red
Fan fail and NTC fail or Inner temperature alarm ($\geq 65^{\circ}\text{C}$)	Red	Blanking Red

2-2. Standalone control mode

HEX can detect temperature inside of cabinet to control cooling



INTER / OUTER FAN SPEED V.S. INNER TEMPERATURE



Part no. :

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3. Environmental condition

3-1. Operating temperature

-40°C ~ +65°C (-40°F ~ 149°F)

3-2. Storage temperature

-40°C ~ +70°C (-40°F ~ 158°F)

3-3. Humidity

External air loop : 0 ~ 100% RH

Internal air loop : 0 ~ 90% RH, non-condensing

3-4. Ingress Protection rating (external side)

IP55 (IEC60529)

3-5. MTBF

The L10 Fan life is expected to be at least 80,000 hours continuous operation at 40°C with 15 ~ 65%RH.@ label rated voltage

4. Reliability

Test item	Condition
High temperature	IEC 60068-2-2
Low temperature	IEC 60068-2-1
High temp. / High humidity	IEC 60068-2-14 TEST Nb
Temperature cycling	IEC 60068-2-3
Vibration	ETSI 300 019-1-4 CLASS 4.1
Ingress protection (External side)	IEC 60529 IP55 (NEMA 3)
Package bump	IEC 60068-2-29

5. Safety Certification

UL/cUL

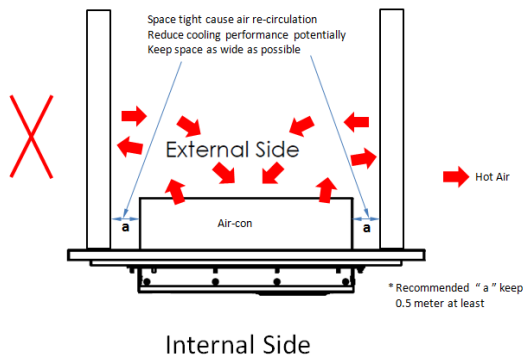


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6. Installation Notice

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



circulate.

