

Heat Exchanger

Instruction Manual

HX-0301L-88TK1NH28T40NNN

Safety Precautions

⚠ WARNING Incorrect handling may cause death or injury.

- Before connecting with the fittings, check if no damage or problems are found on the fittings. Connect properly and make sure that leak test is conducted before actual operation to prevent fluid from leaking into the atmosphere (Hereinafter, the fluid used is referred as "gas" or "fluid").
- DO NOT** apply any fluids corrosive to materials exposed to gas. Corrosion may cause fluid to leak into the atmosphere. Please confirm the physical properties of fluid before using.
- This device is not designed as an explosion-proof structure. **DO NOT** use this device in a place where explosion-proof structure are required. Doing so may cause fire or explosion.
- Prepare temperature controller unit when operating Vaporizer/Heat Exchanger and do not set the temperature over than maximum operating temperature. Wring temperature setting may cause fire or destruction of the device. It is recommended to add abnormal overheating detector if necessary.
- This device must be earthed before use. Otherwise, there is the risk of electric shock.
- Thermal switch is equipped in Vaporizer/Heat Exchanger to prevent overheating. However, the operating temperature of thermal switch would vary due to operating conditions and ambient temperature.
- Attach/remove connector and terminals, please make sure that power supply turning off. It may cause fire or shock hazard.

⚠ CAUTION Incorrect handling may lead to slight or moderate injuries or may cause damage to or loss of facilities or equipment.

- Observe the listed in the WARNING (above).
- Use out-of-spec power supply will cause electric shock, fire, and malfunction of device.
- This device is not designed to be waterproof. **DO NOT** locate this device outdoors or in a place where it may be splashed with water. Doing so may cause fire, trouble, or malfunction of the device.
- DO NOT** modify this device. Modification may result in fire or failure of the device.
- A warm-up period more than 60 minutes is recommended after reaching the set temperature. Otherwise, the output gas temperature will be low.
- This device is a precious device, please handle it carefully. Dropping down or handing it carelessly will cause damage. Please use assist instrument while moving or setting the device.
- Please use a screw with depth of 5mm or less from the case surface when mounting HX by the hole on the surface (M4). It will crush the internal surface of the product, and lead the break.
- The surface of device gets high temperature while heating up. Please wrap up the device to prevent careless touch. Please be careful to deal with the device while it is working because of the risk of burning from high temperature. Please conduct replacement after checking that the device has cooled down.

1. Introduction

This manual explains basic operation of the HX-0301L-88TK1NH28T40NNN (Hereinafter referred as "HX").

Please read through this manual carefully to familiarize yourself with the features of HX.

2. Summary

HX is an ultra-clean high efficiency fluid heat exchanger unit employing Lintec's high efficiency liquid vaporization technology with maximum operating temperature up to 300°C and maximum heat exchange rate up to 250SLM. This apparatus is employed over a wide range of applications from semiconductor industries to other major manufacturing sectors. Additionally, Stainless steel 316L is applied as fluid-exposed parts of HX.

3. Features

RoHS compliant.

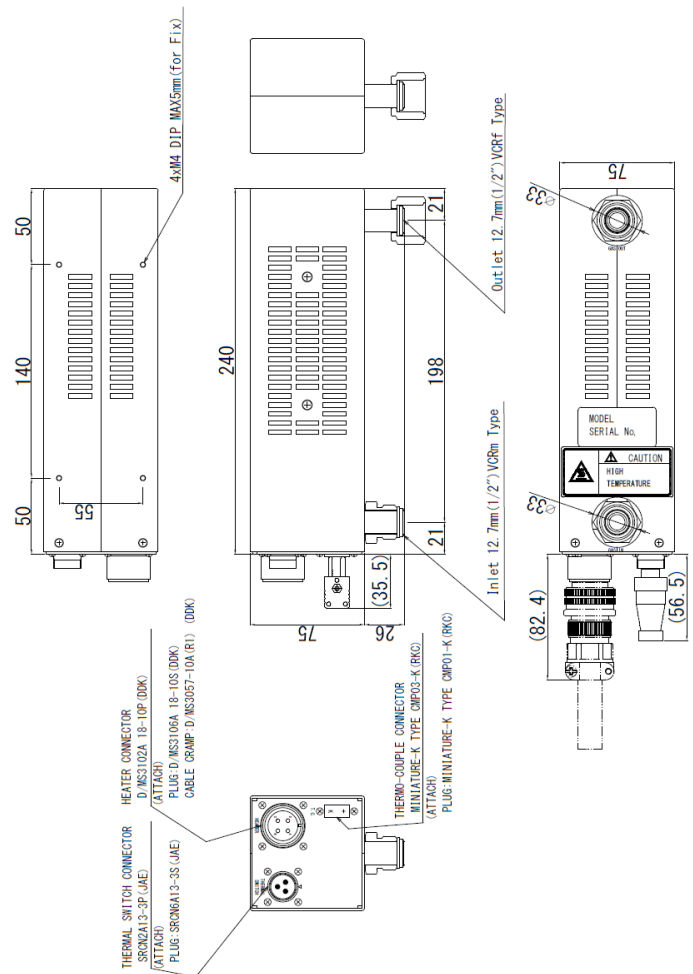
4. Specification / Dimensions

(1) Specification

Product name	Heat Exchanger	
Model	HX-0301L-88TK1NH28T40NNN	
Flow rate (N2)	250SLM	
Pressure loss (N2)	94kPa (300°C, 250SLM)	
Withstand pressure (Gauge pressure)	1 MPa(G)	
Leak integrity	Less than $5.0 \times 10^{-10} \text{Pa} \cdot \text{m}^3/\text{sec}$ (He)	
Operating condition	Continuous operation	
Operating temperature	15 to 50°C (Without dew condensation)	
Maximum operating temperature	300°C	
Recommended temperature control method	PID control	
Material exposed to gas	Stainless steel 316L	
Fitting.	Inlet	12.7mm (1/2") VCR type male
	Outlet	12.7mm (1/2") VCR type female
Maximum power consumption	240V 3600W Line currents 8.7A (200V 2500W Line currents 7.2A)	
Power source	Three-phase AC 200 to 240V	
Thermocouple	K type 1pc	
Thermal switch Specification (Note1)	400 ± 20°C OPEN	
	370 ± 10°C CLOSE (Electric rating : DC 5 to 48V / 1 to 100mA)	
Mounting position	Free (Except Upright with the connectors on the top)	
Weight	Approx.4kg	
Standard accessories	Heater connector(plug) : D/MS3106A18-10S(DDK) Heater connector (cable clamp):D/MS3057-10A(R1) (DDK) Thermal switch connector : SRCN6A13-3S(JAE) Thermocouple connector : CMP01-K(RKC)	

Note1) In actual operation, the operation temperature of thermal switch effects the applied condition as ambient temperature.

(2) Dimensions



3. Features

RoHS compliant.

5. Connection

(1) Heater Connectors

Equipped Connector : D/MS3102A18-10P (DDK)

Applicable Connector(plug): D/MS3106A18-10S (DDK)

(cable clamp) : D/MS3057-10A (R1) (DDK)

Pin No.	Signal
A	Three-phase AC 240V 3600W
B	
C	
D	Case Gnd.

(2) Thermal switch Connectors

Equipped Connector : SRCN2A13-3P (JAE)

Applicable Connector : SRCN6A13-3S (JAE)

Pin No.	Signal
1	N.C.
2	Thermal switch
3	

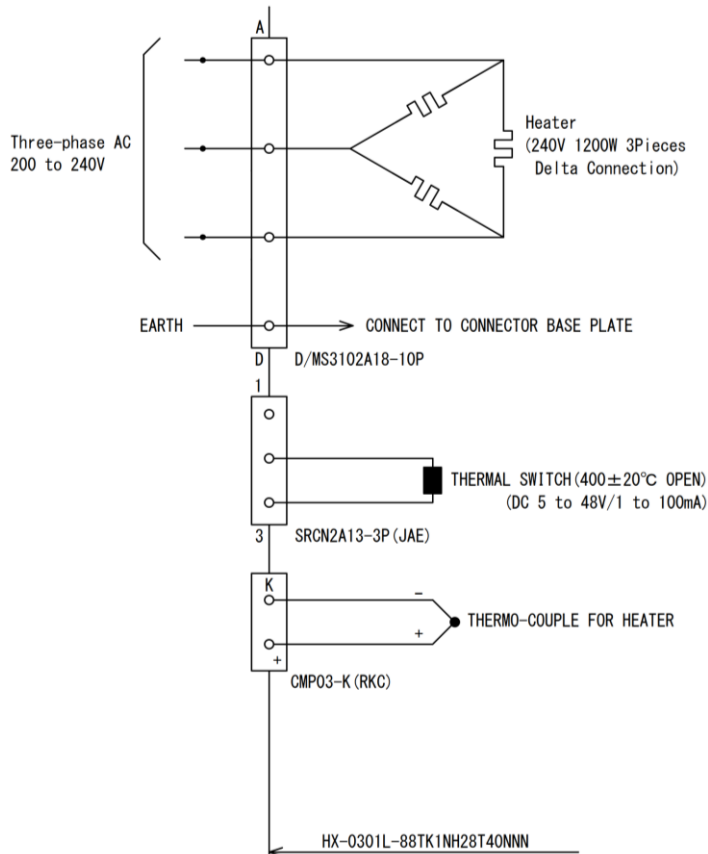
(3) Thermocouple connectors

Equipped Connector : CMP03-K (RKC Instrument Inc.)

Applicable Connector : CMP01-K (RKC Instrument Inc.)

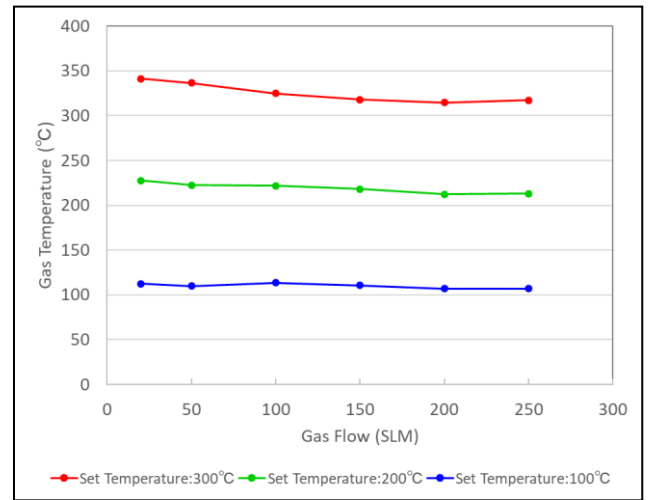
Pin No.	Signal
K	K Type Thermocouple (-)
+	K Type Thermocouple (+)

6. Connection diagram



7. Technical Data

Estimated gas temperatures can be found from the below graphs. However, this data is for nitrogen gas and should not be applied as is to gases other than nitrogen. Please use this data only as a guide.



·Gas: N₂

·Operating temperature: 20°C

8. Product Warranty

(1) Period

This product is guaranteed for 1 year from the date of shipment.

Defects are repaired according to the following regulations.

(2) Scope

Warranty coverage is restricted to this product only. Any other damage caused by this product is not covered.

(3) The following repairs are not covered by the warranty:

- 1) Failure caused by product of fluid.
- 2) Failure caused by misuse (including careless operation), incorrect repair or modification.
- 3) Failure cause by falling or dropping after purchase.
- 4) Failure caused by fire, earthquake, flood, lightning or other natural disasters.

Even if the warranty period is still in effect, repair service may not be provided in the following cases.

- 1) When fluid or gas used in the product is unclear.
- 2) The product is returned with fluid remaining inside, and safety cannot be confirmed.

This instruction manual is subject to revision without notice.

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