USER'S MANUAL

AIR/AIR HEAT EXCHANGER FOR ELECTRICAL ENCLOSURE

IP-HEX016
IP-HEX035
IP-HEX050
IP-HEX080

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Description **Original user's manual for air/air heat exchangers IP-HEX series** **Language: English**	**ISSUE**	26/04/2022	
	REV. 01		
	REV. 02		
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1 - TECHNICAL DATA

Features	Unit	IP-HEX016	IP-HEX035	IP-HEX050	IP-HEX080
Specific heat transmission	W/K	16	35	50	80
Power supply	V | ph| Hz	230 | 1| 50/60Hz			
Current consumption	A	0.46/0.58	0.46/0.58	0.46/0.58	0.72/0.96
Absorbed fan power	W	64	100/130	100/130	160/200
Side cabinet fan flow, free blowing	m^3/h	136	575	575	860
Internal operating Temp	°C (°F)	-5/+55 (23/+131)			
Ambient temperature limit	°C (°F)	-5/+55 (23/+131)			
Thermostat	-	NO	NO	NO	NO
Internal circuit protection degree	-	IP54	IP55	IP55	IP55
Noise level	dB (A)	58	76	76	76
Installation	-	Internal/external			
Dimensions HxWxD	mm	410x204x109	780x254x90	780x312x90	1250x312x108
Weight	Kg	4.6	7.6	9.5	18.5
Conformity/Certification	-	CE			

WARNING

- **Safety of AIR/AIR heat exchanger is warranted only by proper use of these instruction which must be kept.**
- **Installation must be done by qualified personnel only after enclosure power supply disconnecting.**
- **Before any operation, switch off the power supply.**
- **The appliance is classified as not accessible to the general public**
- **The AIR/AIR heat exchanger 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.**
- **Children being supervised not to play with the AIR/AIR heat exchanger.**
- **The AIR/AIR heat exchanger must be installed in accordance with national wiring regulations (IEC 60335-2-40:2018)**
- **Upstream of the electrical connection, an efficient disconnection system must be provided in compliance with the AS / NSZ 3000 standard**
- **Internal and external components of electrical enclosure don't have to affect the proper installation of AIR/AIR heat exchanger.**
- **Inside of electrical enclosure there must not be components that could affect the proper ventilation.**
- **Provide a proper fixing of the electrical enclosure to the floor to prevent accidental tipping due to the supplementary weight of installed AIR/AIR heat exchanger**
- **Installation position of AIR/AIR heat exchanger must be selected to ensure good ventilation. Take care that any internal/external components of enclosure don't obstruct air passage. (see section 2.2 GENERAL CHECKS BEFORE INSTALLATION)**
- **The heat loss of the components installed inside of the electrical enclosure must be lower than useful cooling power of the AIR/AIR heat exchanger.**
- **AIR/AIR heat exchanger IP-HEX series must be handled in upright position and protected against accidental tipping over.**
- **Do not modify the AIR/AIR heat exchanger structure if it is not specified in these instruction or associated instructions.**
- **During transportation of enclosures with installed AIR/AIR heat exchanger a proper bracket must be used to support the cooling unit weight.**
- **Install only original spare parts and accessories.**
- **Protection against access to live parts must be warranty by installer.**
- **The supply connector of the AIR/AIR heat exchanger must only be connected and disconnected when electrical enclosure is electrically disconnected.**
- **Follow all technical data shown in this manual**

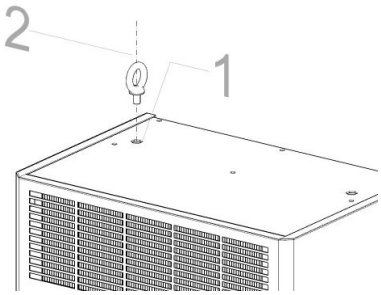
2 - INSTALLATION

2.1 PRODUCT HANDLING

AIR/AIR HEAT EXCHANGER must be handled in upright position and protected against accidental tipping over.

The air/air heat exchanger handling, when unpacked, can be done thanks to lifting eye bolt (if present).
If lifting eye bolts are not included, please provide an adequate lifting eye bolt **(2)** and screw it inside blind threaded **(1)** insert placed on top of the air/air heat exchanger.

Check the proper fixing of eye bolts before lift the AIR/AIR heat exchanger.



2.2 GENERAL CHECKS BEFORE INSTALLATION

Before the installation make sure that the cabinet is disconnected from the electrical supply.

GENERAL CHECKS
- electrical enclosure must be disconnected form power supply
- electrical data shown on rating label pasted on air/air heat exchanger side must be guaranteed
- Electrical enclosure must be sized according to air/air heat exchanger dimensions and weight.
- Electrical enclosure must be properly fixed to the ground in order to prevent overturning.
- Electrical enclosure must have at least IP54 protection degree
- Internal and external components of electrical enclosure don't have to affect the proper installation of the air/air heat exchanger
- The installation site must be free from excessive dirt, aggressive ambient conditions and moisture.
- The installation site must be free from hot air flows
- The internal side of electrical enclosure must be free from dirt and moisture
- The environment temperature must be within the range specified on label pasted on the air/air heat exchanger side
- Inside of electrical enclosure there must not be components that could affect the proper ventilation
- the enclosure positioning with installed air/air heat exchanger must be carefully selected to ensure good ventilation (clearance between the air/air heat exchanger and the near walls must be at least 500 mm in each side).

The unit can be installed inside or outside of the enclosure according to the application needs.

The air/air heat exchangers are ready to be installed on the external cabinet wall

2.3 INSTALLATION OUTSIDE THE ENCLOSURE

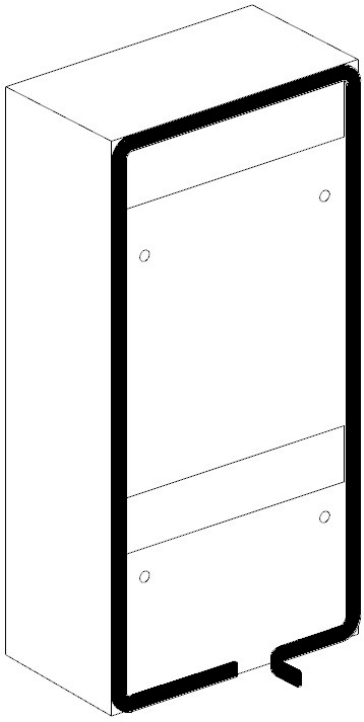
To ensure a good heat exchanging with the enclosure we recommend to install the unit as high as possible on the enclosure wall,

1) Make the fixing hole on the enclosure as is shown in the drilling template for external installation.

Before to drill the enclosure wall please check the right code printed on the label placed on heat exchangers side.

After drilling, please deburr all sharp edges to avoid accidental injuries

2) Apply the gasket (included in fixing kit) on the back panel of the air/air heat exchanger (if not just applied)



The gasket must avoid the accidental leakage of air from inside to outside or the ingress of external air inside the enclosure.

3) Lift the air /air heat exchanger and place it near the enclosure wall

4) Mount the air /air heat exchanger on the electrical cabinet according to the drilling template with screws and washers against unscrewing (included in mounting kit)

The enclosure IP54 degree is guaranteed only if the air/air heat exchanger is properly mounted on enclosure wall.

2.4 INSTALLATION INSIDE THE ENCLOSURE

To ensure a good heat exchanging with the enclosure we recommend to install the unit as high as possible on the enclosure wall,

1) Make the fixing hole on the enclosure as is shown in the drilling template for internal installation.

Before to drill the enclosure wall please check the right code printed on the label placed on heat exchangers side.

After drilling, please deburr all sharp edges to avoid accidental injuries

The internal installation needs to move the supply cable exit from the back to the bottom of the air/air heat exchanger.

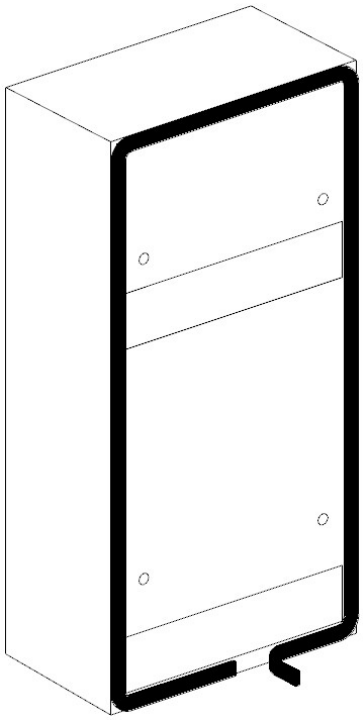
- **Remove the metal cover of the unit**
- **Unscrew the cable gland and pull the supply cable out from gland**

- **Change the position of the cable gland and insert the cable inside it.**

- **Screw the cable gland**
- **Replace the metal cover**

For internal installation the heat exchanger must be rotated 180° with respect to its position in external installation

2) Apply the gasket (included in fixing kit) on the back panel of the air/air heat exchanger (if not just applied)



The gasket must avoid the accidental leakage of air from inside to outside or the ingress of external air inside the enclosure.

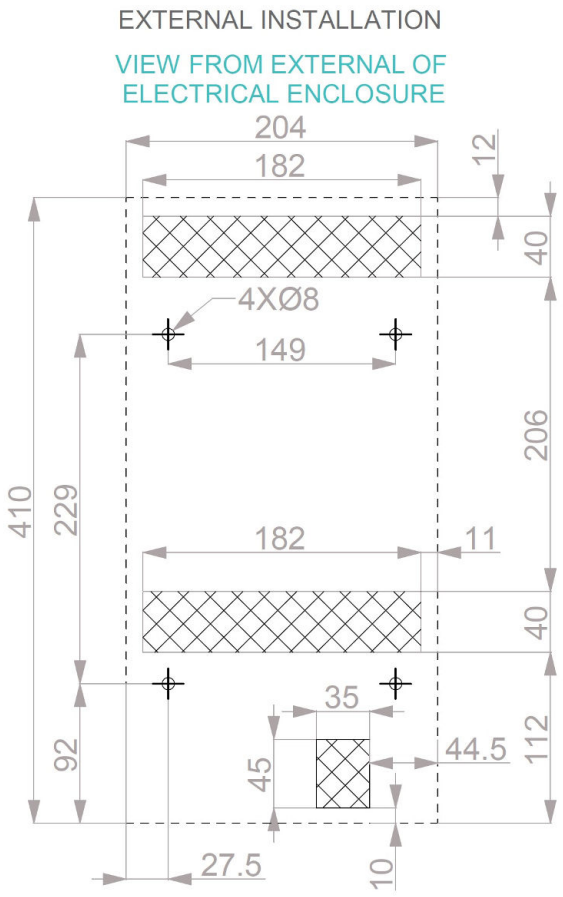
3) Lift the air /air heat exchanger and place it near the enclosure wall

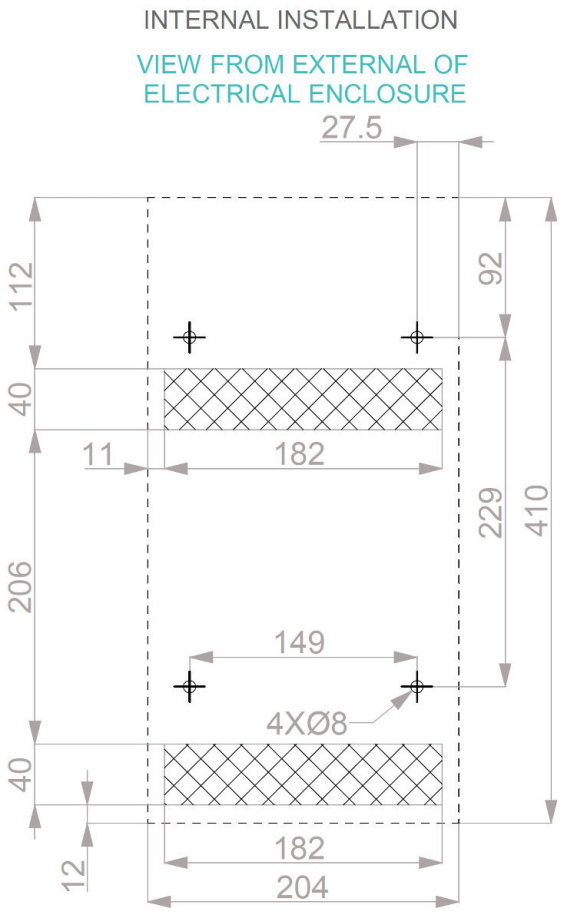
4) Mount the air /air heat exchanger on the electrical cabinet according to the drilling template with screws and washers against unscrewing (included in mounting kit)

The enclosure IP54 degree is guaranteed only if the air/air heat exchanger is properly mounted on enclosure wall.

3 – CUT OUT DIMENSIONS

IP-HEX016

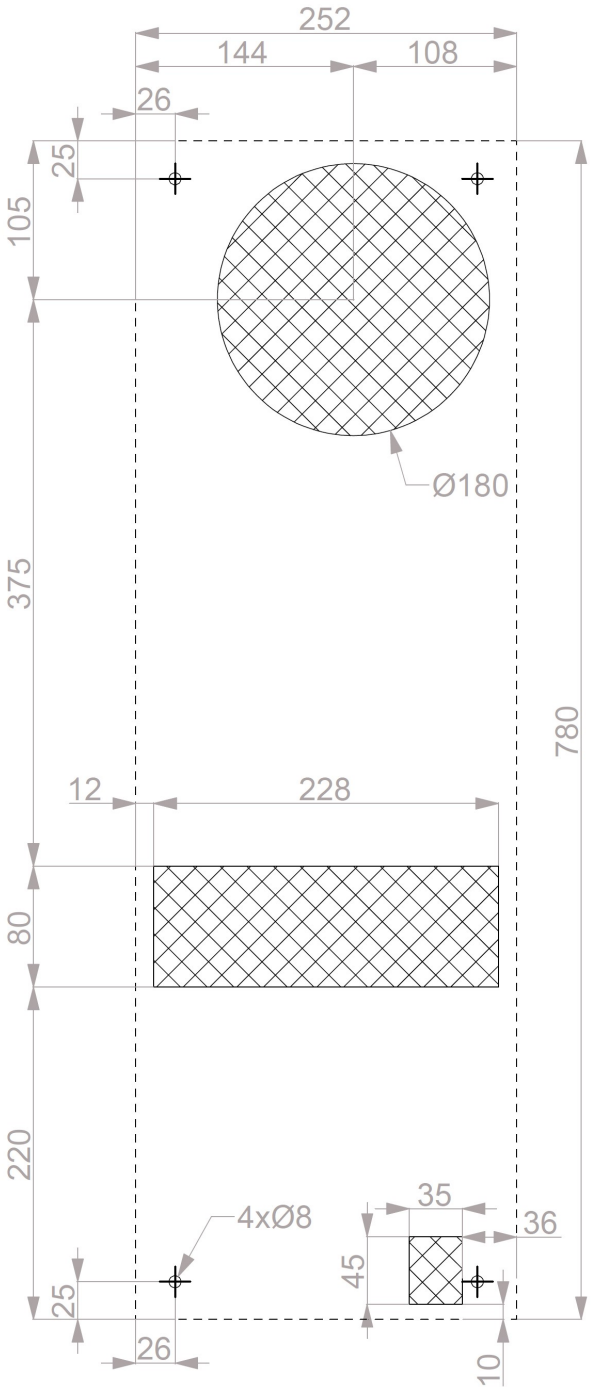




IP-HEX035

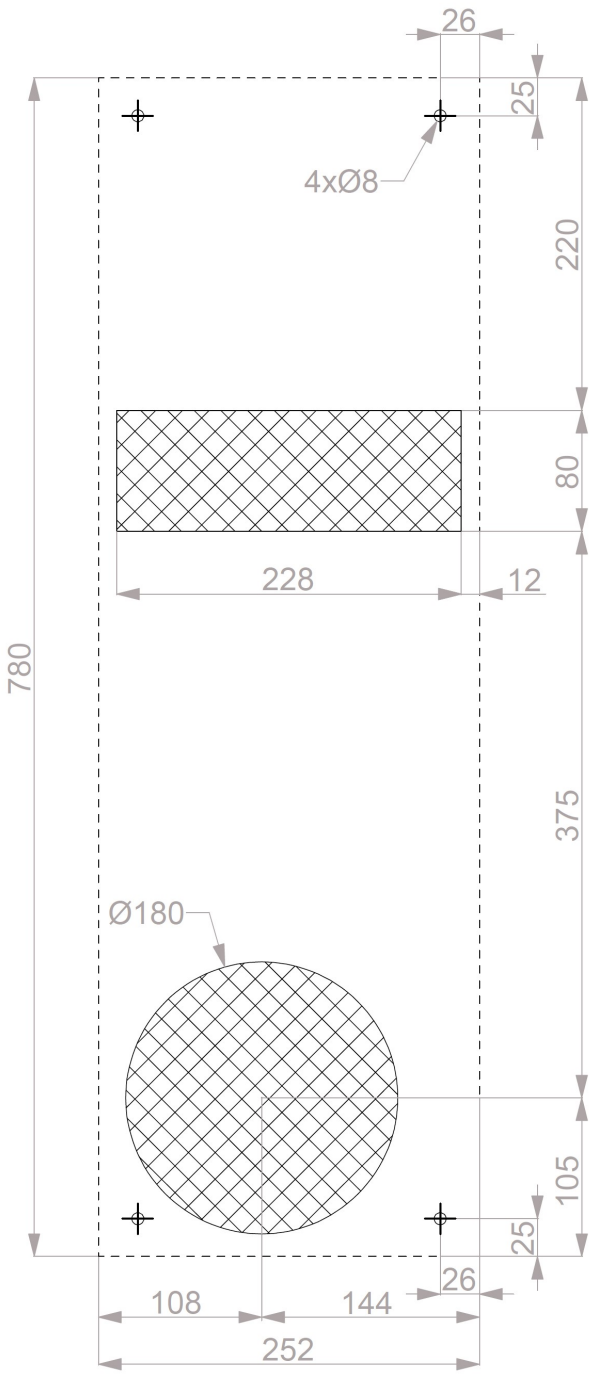
EXTERNAL INSTALLATION

VIEW FROM EXTERNAL OF ELECTRICAL ENCLOSURE



INTERNAL INSTALLATION

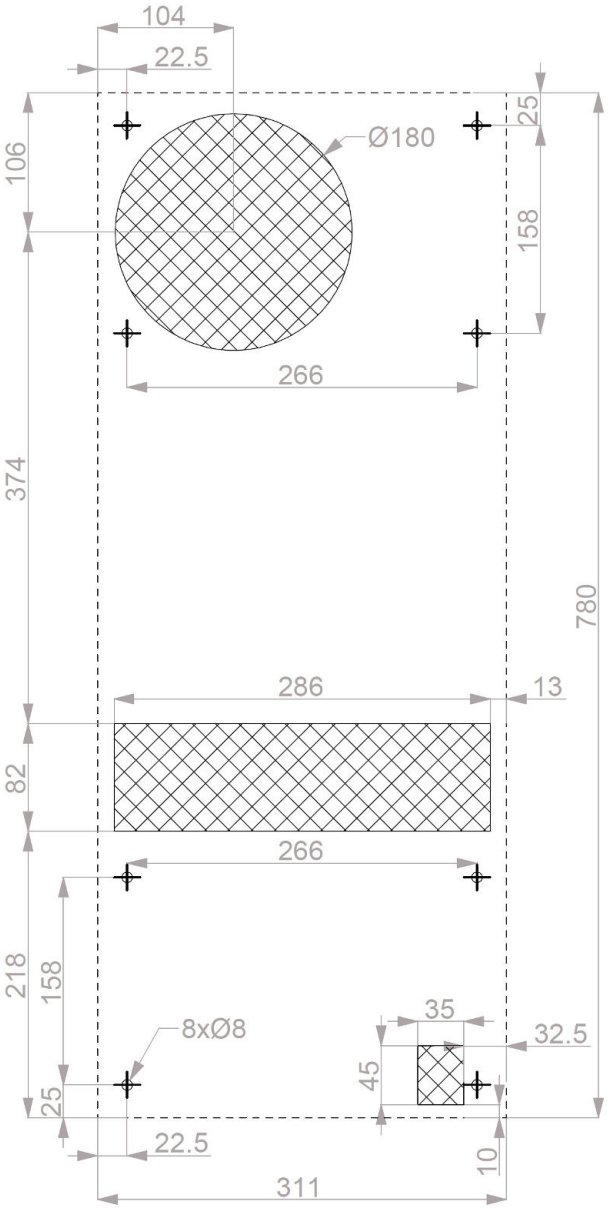
VIEW FROM EXTERNAL OF ELECTRICAL ENCLOSURE



IP-HEX050

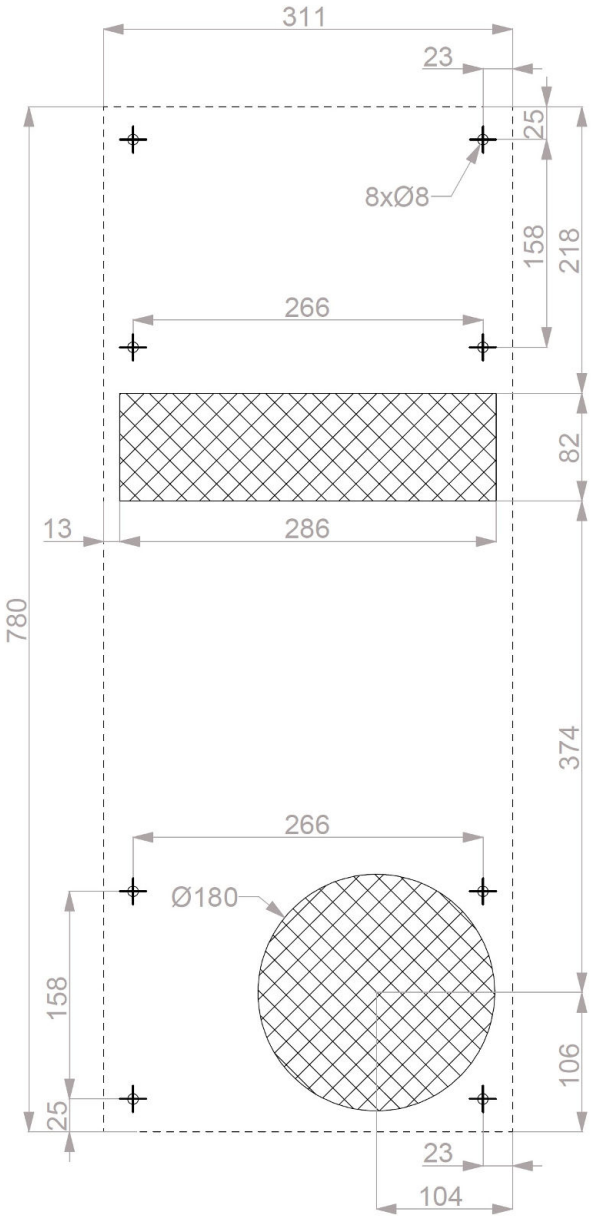
EXTERNAL INSTALLATION

VIEW FROM EXTERNAL OF ELECTRICAL ENCLOSURE

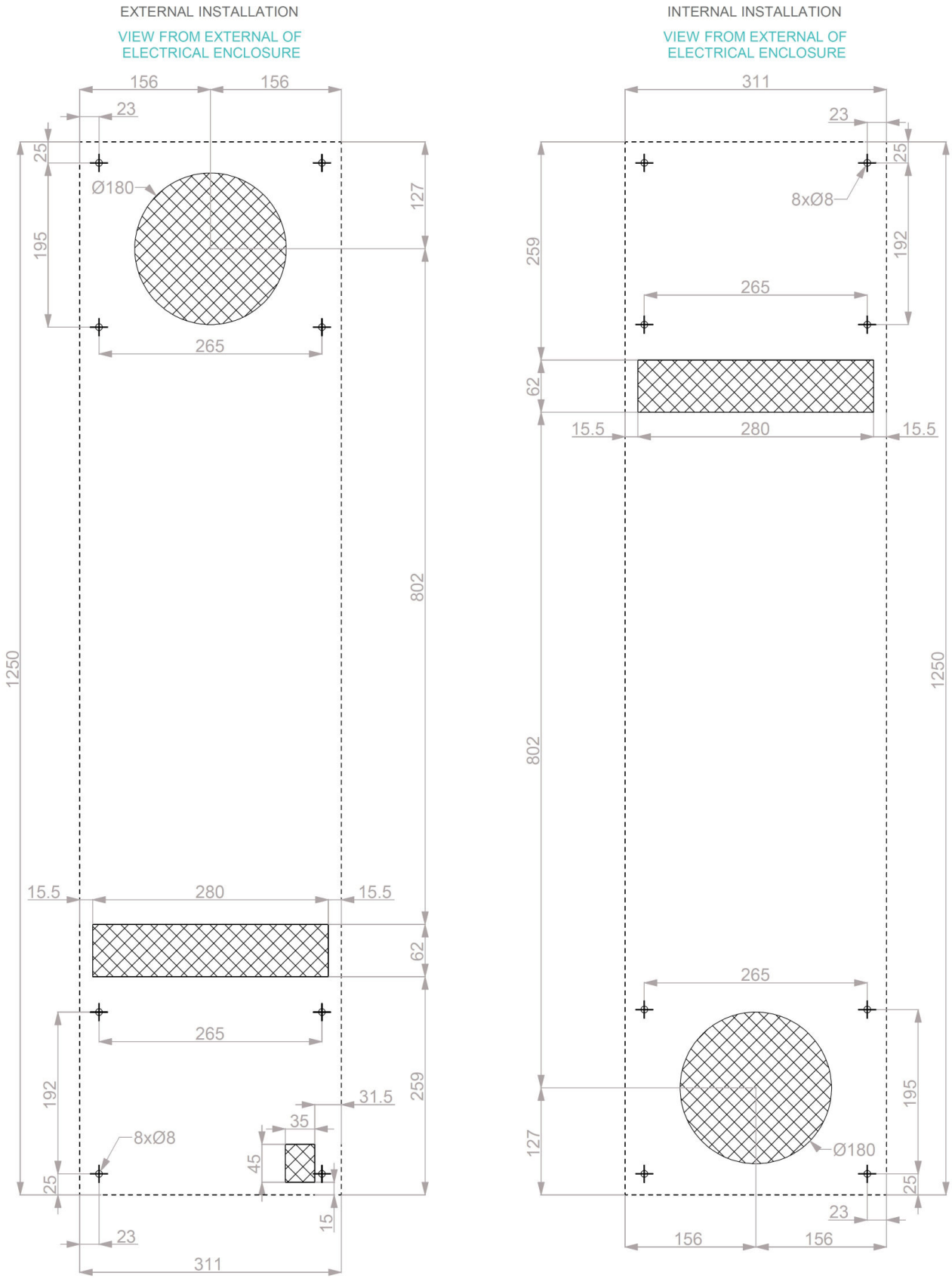


INTERNAL INSTALLATION

VIEW FROM EXTERNAL OF ELECTRICAL ENCLOSURE



IP-HEX080


EXTERNAL INSTALLATION
VIEW FROM EXTERNAL OF ELECTRICAL ENCLOSURE
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INTERNAL INSTALLATION
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4 - ELECTRICAL CONNECTION

The electrical installation must be carried out by a qualified electrician who is responsible for compliance with the applicable standards and regulations.

Wire the supply cable according to voltage rating shown by the label pasted on side of air/air heat exchanger

The green/yellow ground pole must be connected with an adequate ground circuit according to the local norms and safety regulations which govern the use of electrical material

Electrical data shown on rating label pasted on unit side must be guaranteed

Install the delayed fuse recommended on rating plate pasted on air/air heat exchanger side to protect the line and enclosure components against short-circuit.

Upstream of the electrical connection, an efficient disconnection system must be provided and it must be clearly identified

5 - STARTING AND ADJUSTMENT

After finishing assembly and properly wiring of the air/air heat exchanger, turn ON the electrical supply.

The unit operates automatically, that is to say, after insertion, the fans operate continuously making the air inside the cabinet circulate. This way a uniform distribution of temperature inside the cabinet itself is attained.

After first turning ON check the points below:

- **the external air flows regularly and is not even partially recycled**
- **the air circulates inside the cabinet without obstructions.**
- **the power supply voltage and absorbed current values match with the values shown on label pasted on the side of the unit**

6 - MAINTENANCE

IP-HEX air/air heat exchanger is designed for use in industrial environments thus requires little maintenance but it is important that small measures are met so as to ensure maximum performance and proper operation.
These operations can be performed even by unskilled personnel after that electrical supply is turned off.

INTERVALS	OPERATIONS
Every months:	check that the exchangers, fan are clean and that dirt does not affects proper air flow.
	Check no abnormal noises during proper operation.
Every six months:	Check that the fans and the other components do not show abnormal vibrations or overheating signs.
Yearly:	Check that the electrical connections are tight,
	Check the electrical components status and replace them if necessary. Clean the inside of the system.
	Clean the inside of the system.
If the unit operates in dusty environments or if experience requires more frequent cleaning, it is essential to perform them as needed	

it is recommended to replace the fans after 30.000 working hours

6.1 GENERAL CLEANING OF THE UNIT

During cleaning wear SAFETY glasses, rubber cut-resistant gloves compatible with the detergent used and accident-prevention shoes.

1) Remove the frontal cover
2) Make a first cleaning with light compressed air blow
3) To clean the pack, blow compressed air in the opposite direction to the normal air flow (use compressed air at a pressure not exceeding 4 Bar).
4) If needed it is also possible to clean the heat exchanger pack with a liquid detergent (compatible with: PVC, polyethylene and silicone)

not wet the electrical connections.

WARRANTY

WE
IP ENCLOSURES

guarantees that the product is free from any quality defects.

The product is guaranteed for a period of 12 months from the date of delivery, provided it operates under the following conditions:

1. value of power supply indicated in the data plate is completely respected;
2. requirements specified on user's manual are completely respected;
3. cabinet temperature is not higher or lower than its rated temperature;
4. ambient temperature is not higher or lower than its rated temperature;
5. the product is mounted on cabinets with a minimum IP54 protection level;
6. the product is mounted on cabinets that not requiring higher cooling power than expected;
7. the product is clearly identifiable by serial number.

The warranty does not apply if :

1. the cooling circuit has been modified about type and quantity of refrigerant or composition;
2. the unit operates in acid or corrosive ambient;
3. the unit has been modified without IP ENCLOSURES consent.

This warranty shall become null as soon as the product is altered or modified in its structure or in circuits.
The terms of this warranty (commencement and termination dates) are not modified by any repair or replacement of products.
For every part that results defective during the period of this warranty, IP ENCLOSURES shall repair or replace it. Any others charges arising from removal, handling and installation of the products shall not be refunded by IP ENCLOSURES.
Like is specified on user's manual, installation, handling, the correct earthing in accordance with all current standards are under the responsibility of costumer.
In the event of any damage caused by a defective product shall apply the EEC85.374 standard.
The malfunction must be communicated in writing to IP ENCLOSURES.
Warranty is void if the costumer is not in good standing with the payments

UE DECLARATION OF CONFORMITY

WE

IP ENCLOSURES

DECLARE THAT THE AIR/AIR HEAT EXCHANGER FOR ELECTRICAL CABINETS

IP-HEX series

DO COMPLY WITH THE FOLLOWING DIRECTIVES

2006/42/CE MACHINERY DIRECTIVE (17 May 2006)
2014/30/UE EMC DIRECTIVE (26 February 2014)
2011/65/UE ROHS DIRECTIVE (8 June 2011)

STANDARDS APPLIED TO MEET THE PRINCIPAL ELEMENTS OF THE DIRECTIVE

EN 61000-6-2:2005; 6-3:2007 + A1:2011
EN 60335-1: 2012

		Date	Name
Description Declaration of Conformity for AIR/AIR heat exchanger IP-HEX	**ISSUE**	01/06/2020	
	REV. 1		
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NOTES