



Specification and Manual

Customer: N/A

Description: Filter Fan Unit / Exhaust Grille package

Customer Part No.: N/A Rev.: N/A

Delta Model No.: HEF070 / HEF160 / HEF500 Series Rev.: V01

Sample Date Code: _____

Sample Issue Date: _____

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

Approved by: _____

Date: _____

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Part no.:

Delta model no.: HEF070 / HEF160 / HEF500 Series

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Part no.:

Delta model no.: HEF070 / HEF160 / HEF500 Series

Description

This document is an installation and the characteristics of Delta HEF series. 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

The filter fan unit is a precision instrument; it should be handled and transported with care. Do not stand on the box, or place heavy objects on top of the box. Pay attention to the below icons on the package.



Safety Notes

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

Meaning of WARNING and CAUTION notices:

 **Warning:**

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

 **Caution:**

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

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 **Warning:**

1. Installation work and electrical wiring should be done only by qualified personnel 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.
3. Install the filter fan in accordance with the instructions in this installation manual. Improper installation may result in water leakage, electric shock or fire.
4. Make sure that all wiring is secured, that specified wires are used, and there is no strain on the terminal connections or wires.
5. Before serving or cleaning unit, disconnect power supply.
6. When cutting or drilling into enclosure, do not damage electrical wiring or equipment.
7. Be sure to use only the specified accessories and parts to complete installation.
8. This appliance is intended for use only by qualified personnel.

 **Caution :**

1. Do not block the air inlets or exits.
2. To avoid injury, do not touch the air inlet or fan blades of the unit.
3. Watch your step at the time of filter cleaning or air grille inspection.
4. This appliance is not to be used by any persons with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given proper supervision or instruction.
5. Children should be prevented from playing with the appliance.

Part no.:

Delta model no.: HEF070 / HEF160 / HEF500 Series

Specification for Approval

Customer : N/A

Description : Filter Fan Unit / Exhaust Grille package

Customer P/N : N/A

Rev. :

Delta model no. : HEF070 / HEF160 / HEF500 Series

Rev. : V01

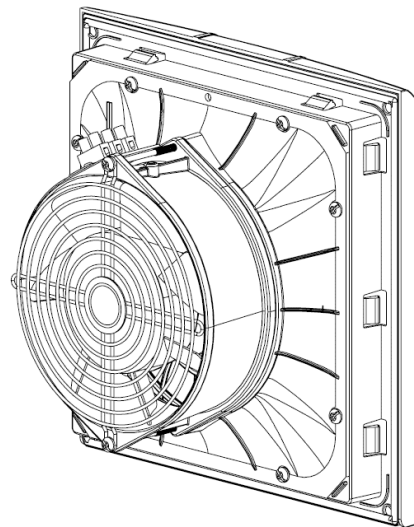
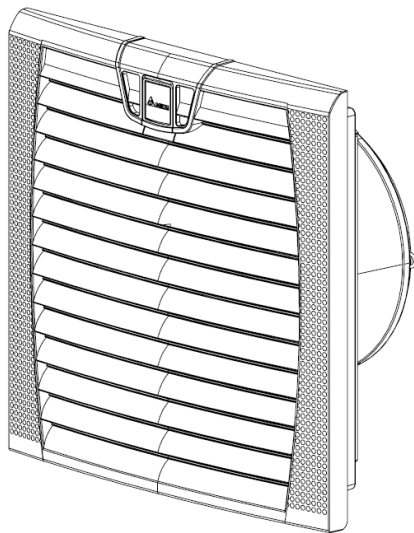
Sample revision. :

Date Code :

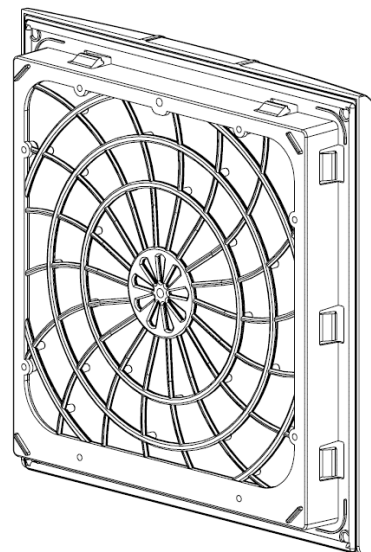
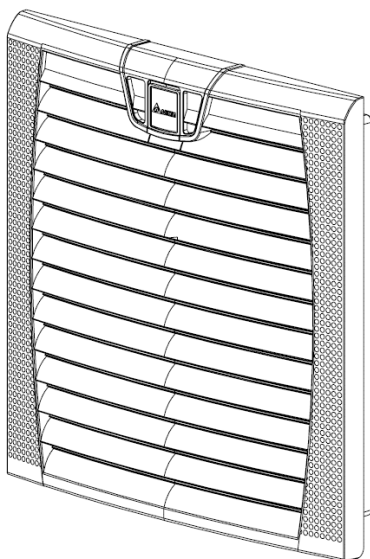
Sample issue date :

Quantity :1 pc

➤ Filter Fan Unit :



➤ Exhaust Grille package :



Part no.:

Delta model no.: HEF070 / HEF160 / HEF500 Series

1. Product Instruction

1-1. General Description


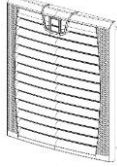
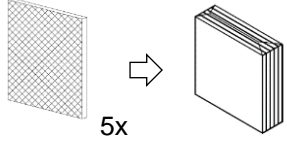
HEF070A / HEF160A / HEF500A Series is a AC Filter Fan unit with 115 VAC power input, HEF070B / HEF160B / HEF500B Series is a AC Filter Fan unit with 230 VAC power input, The filter fan revolutionizes the cabinet climate control. HEF Series filter fans are equipped with high efficiency fiber structure, reliably remove a wide variety of dust particles.

HEF 500 A A A

(1) (2) (3) (4) (5)

No	Item	Digit	Specification
(1)	Product Message	HEF	Filter FAN Series
(2)	Air Flow(CFM)	500	500=500CFM
(3)	Operation Voltage	A	AC 115V for wall mount
		B	AC 230V for wall mount
(4)	Application type	A	Filter Fan Unit
		C	Exhaust Grille package
		E	Filter mat
(5)	Edition	A	First

Part Numbers for Filter Fan Unit / Exhaust Grille Package / Spare Filter mat

Model	Filter Fan Unit	Exhaust Grille Package	Spare Filter Mats
	IP54 / TYPE12	IP54 / TYPE12	IP54 / G3
			
HEF070 Series	HEF070AAA HEF070BAA	HEF070ACA	HEF070AEA
HEF160 Series	HEF160AAA HEF160BAA	HEF160ACA	HEF160AEA
HEF500 Series	HEF500AAA HEF500BAA	HEF500ACA	HEF500AEA

Part no.:

Delta model no.: HEF070 / HEF160 / HEF500 Series

1-2. Specification

HEF070 Series Power & Range			
Filter Fan Unit			
MAIN FEATURE	UNIT	Model Name	
		HEF070AAA	HEF070BAA
Input Voltage	VAC	115	230
Frequency	Hz	50 / 60	50 / 60
Rated Current (50/60Hz)	A	0.22 / 0.17	0.14 / 0.10
Power Consumption (50/60Hz)	W	15 / 12	18 / 14
Power Connection	Terminal Block		
Dimensions, Weight & Mounting method & Color			
Unit Dimension (H x W x D)	mm (inch)	204 x 204 x 107 (8.03 x 8.03 x 4.21)	
Cutout Dimension (H x W)	mm (inch)	177 x 177 (6.97 x 6.97)	
Application	NOTE 1		
Weight	Kg (lbs)	0.88 (1.94)	
Color	RAL 7035 (light-gray)		
Performance & Environmental Protection			
Free Airflow	CMH(CFM)	119 (70)	
Airflow rate in filter with Exhaust Grille	CMH(CFM)	85 (50)	
Fan Speed (50/60Hz)	RPM	2700 / 3100	
Noise (Sound pressure) (50/60Hz)	dB-A	42 / 46	
Operating Temperature Range	°C (°F)	-15 ~ +55 (+5 ~ +131)	
Service Life (L10)	hours	40,000 at 40°C	
Protection Category	EN 60529	IP54	
Protection Category	UL508	NEMA Type 12	

Part no.:

Delta model no.: HEF070 / HEF160 / HEF500 Series

HEF160 Series Power & Range			
Filter Fan Unit			
MAIN FEATURE	UNIT	Model Name	
		HEF160AAA	HEF160BAA
Input Voltage	VAC	115	230
Frequency	Hz	50/60	50/60
Rated Current (50/60Hz)	A	0.25 / 0.25	0.12 / 0.13
Power Consumption (50/60Hz)	W	26 / 30	27 / 31
Power Connection	Terminal Block		
Dimensions, Weight & Mounting method & Color			
Unit Dimension (H x W x D)	mm (inch)	254 x 254 x 136 (10.0 x 10.0 x 5.35)	
Cutout Dimension (H x W)	mm (inch)	224 x 224 (8.82 x 8.82)	
Application	NOTE 1		
Weight	Kg (lbs)	1.69 (3.73)	
Color	RAL 7035 (light-gray)		
Performance & Environmental Protection			
Free Airflow	CMH(CFM)	272(160)	
Airflow rate in filter with Exhaust Grille	CMH(CFM)	229(135)	
Fan Speed (50/60Hz)	RPM	2850 / 3400	
Noise (Sound pressure) (50/60Hz)	dB-A	55 / 60	
Operating Temperature Range	°C (°F)	-15 ~ +55 (+5 ~ +131)	
Service Life (L10)	hours	40,000 at 40°C	
Protection Category	EN 60529	IP54	
Protection Category	UL508	NEMA Type 12	

Part no.:

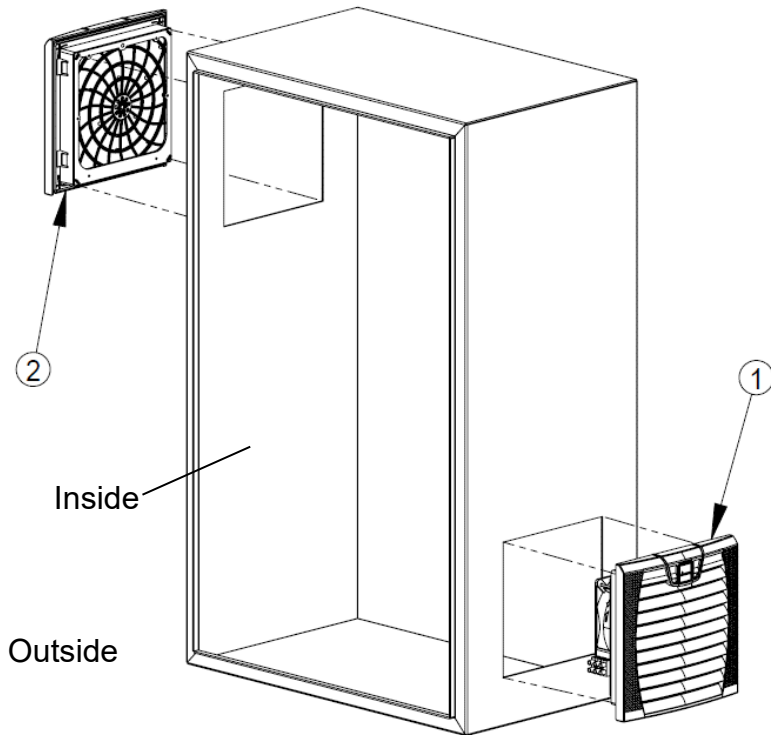
Delta model no.: HEF070 / HEF160 / HEF500 Series

HEF500 Series Power & Range			
Filter Fan Unit			
MAIN FEATURE	UNIT	Model Name	
		HEF500AAA	HEF500BAA
Input Voltage	VAC	115	230
Frequency	Hz	50 / 60	50 / 60
Rated Current (50/60Hz)	A	1.0 / 1.3	0.5 / 0.7
Power Consumption (50/60Hz)	W	113 / 145	117 / 156
Power Connection	Terminal Block		
Dimensions, Weight & Mounting method & Color			
Unit Dimension (H x W x D)	mm (inch)	323 x 323 x 155 (12.7 x 12.7 x 6.1)	
Cutout Dimension (H x W)	mm (inch)	292 x 292 (11.5 x 11.5)	
Application	NOTE 1		
Weight	Kg (lbs)	3.98 (8.77)	
Color	RAL 7035 (light-gray)		
Performance & Environmental Protection			
Free Airflow	CMH(CFM)	850(500)	
Airflow rate in filter with Exhaust Grille	CMH(CFM)	599(350)	
Fan Speed (50/60Hz)	RPM	2550 / 2700	
Noise (Sound pressure) (50/60Hz)	dB-A	68 / 70	
Operating Temperature Range	°C (°F)	-15 ~ +55 (+5 ~ +131)	
Service Life (L10)	hours	40,000 at 40°C	
Protection Category	EN 60529	IP54	
Protection Category	UL508	NEMA Type 12	

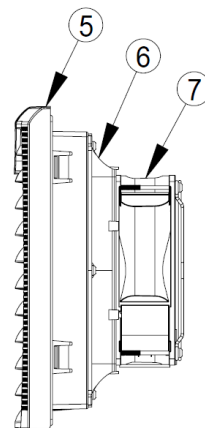
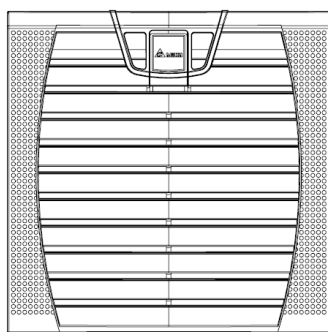
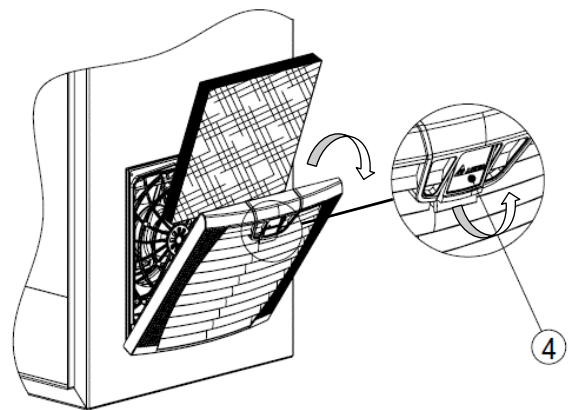
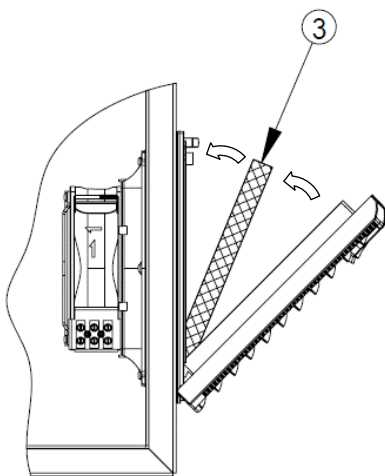
Part no.:

Delta model no.: HEF070 / HEF160 / HEF500 Series

NOTE 1 :

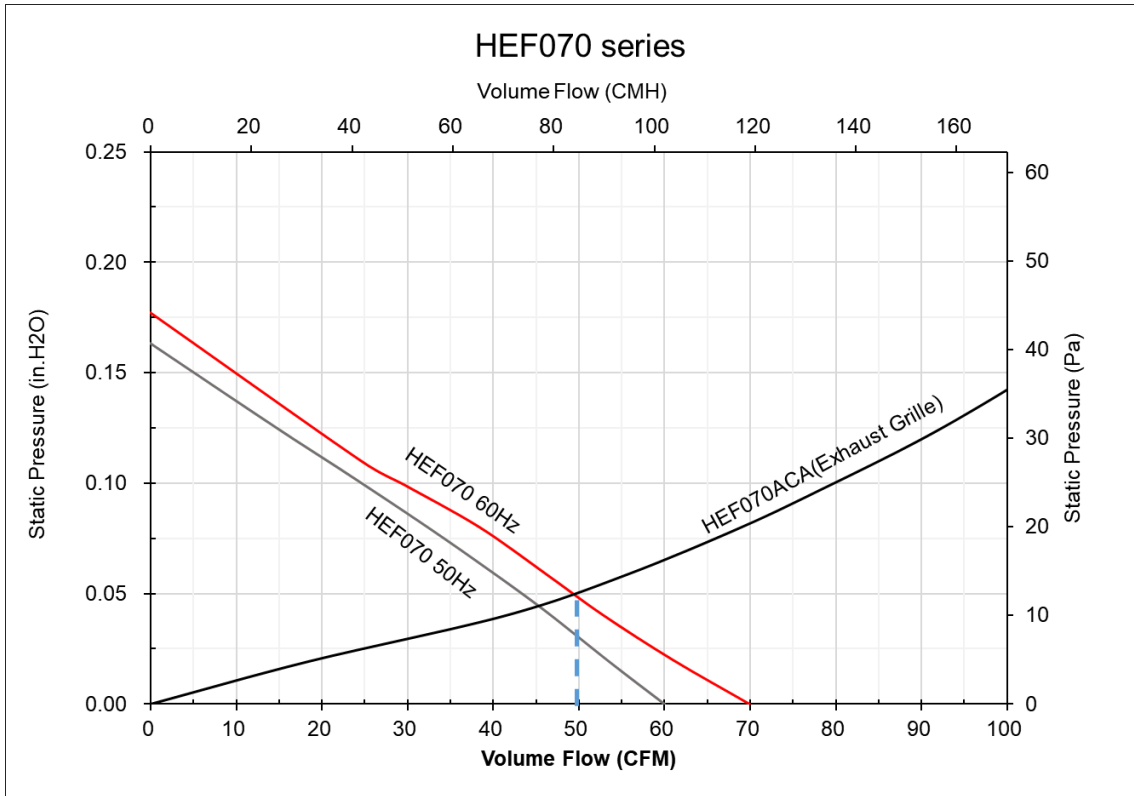


- ①: Filter Fan Unit
- ②: Exhaust Grille package
- ③: Filter mat
- ④: Grille Cover Latch
- ⑤: Outside, Grille Cover
- ⑥: Inside, Fan nozzle
- ⑦: Inside, Fan motor

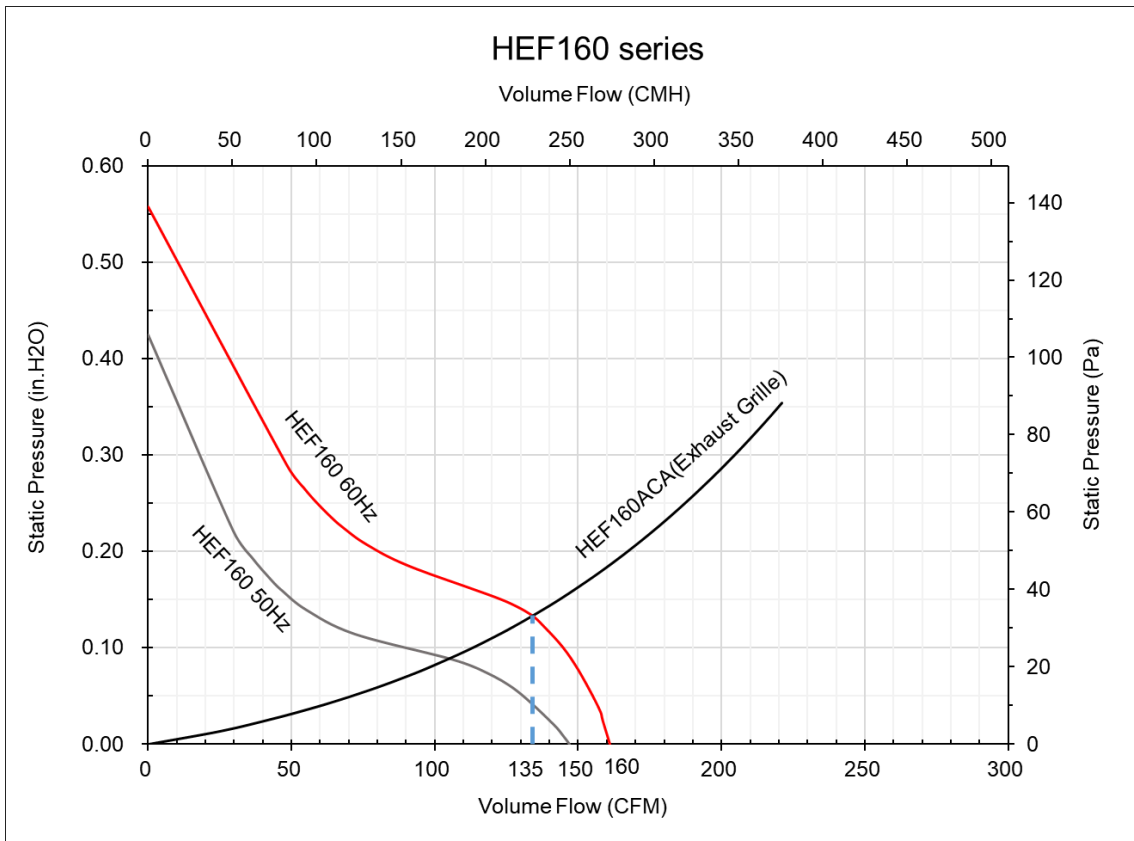


Part no.:

Delta model no.: HEF070 / HEF160 / HEF500 Series



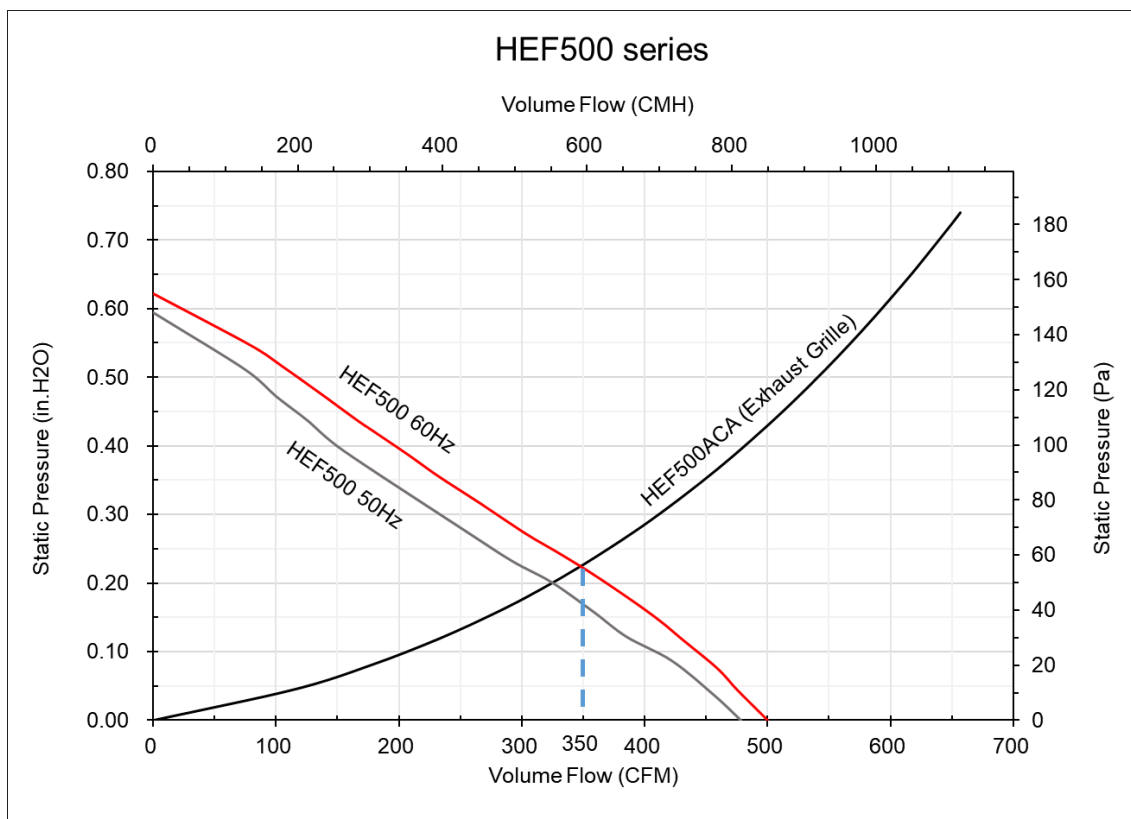
HEF070 Series Capacity Curve, IP54



HEF160 Series Capacity Curve, IP54

Part no.:

Delta model no.: HEF070 / HEF160 / HEF500 Series



HEF500 Series Capacity Curve, IP54

Filter mat key data :

FILTER MEDIA		Filter mat (IP54)		
Dimensions	mm (inch)	HEF070 Series	HEF160 Series	HEF500 Series
		167 x 167 x 15 (6.57 x 6.57 x 0.59)	215 x 215 x 15 (8.64 x 8.64 x 0.59)	283 x 283 x 15 (11.14 x 11.14 x 0.59)
Filter class to EN 779:2012		G3		
Filtration efficiency	%	80 – 90		
Recom. Final pressure drop*	Pa	250		
Dust holding capacity approx. AC fine up to 200 Pa	g/m ²	700		
Thermal stability	°C	Up to 100		
Moisture resistance	%	Up to 100		
Material		Chemical fiber		

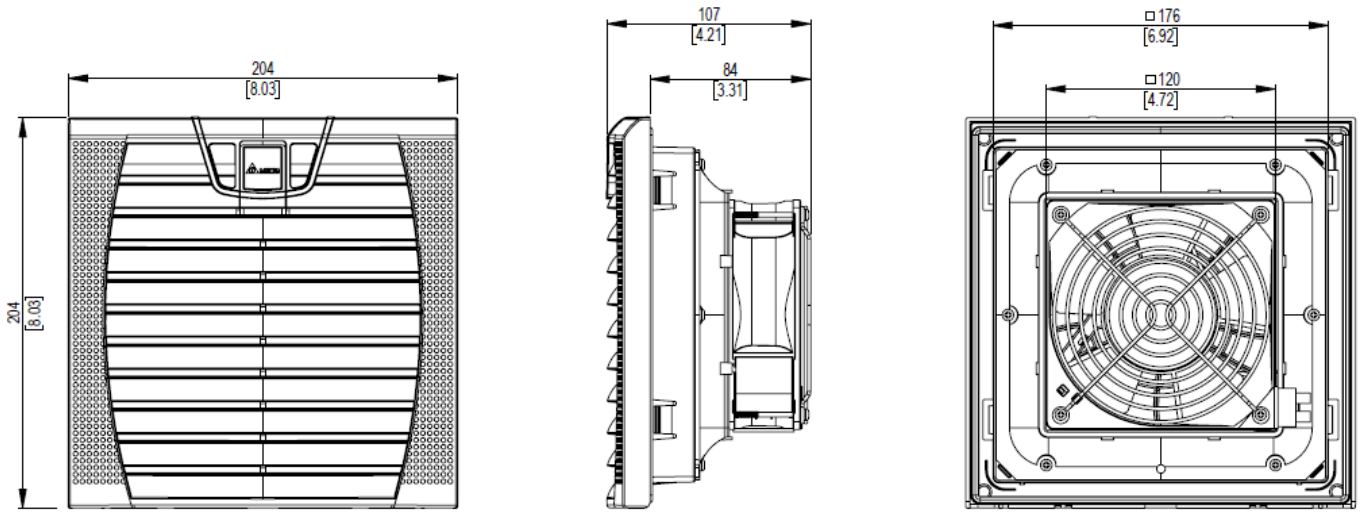
* For cost-efficiency or system-specific reasons it may be appropriate to change the filters before reaching the final pressure drop stated.

Part no.:

Delta model no.: HEF070 / HEF160 / HEF500 Series

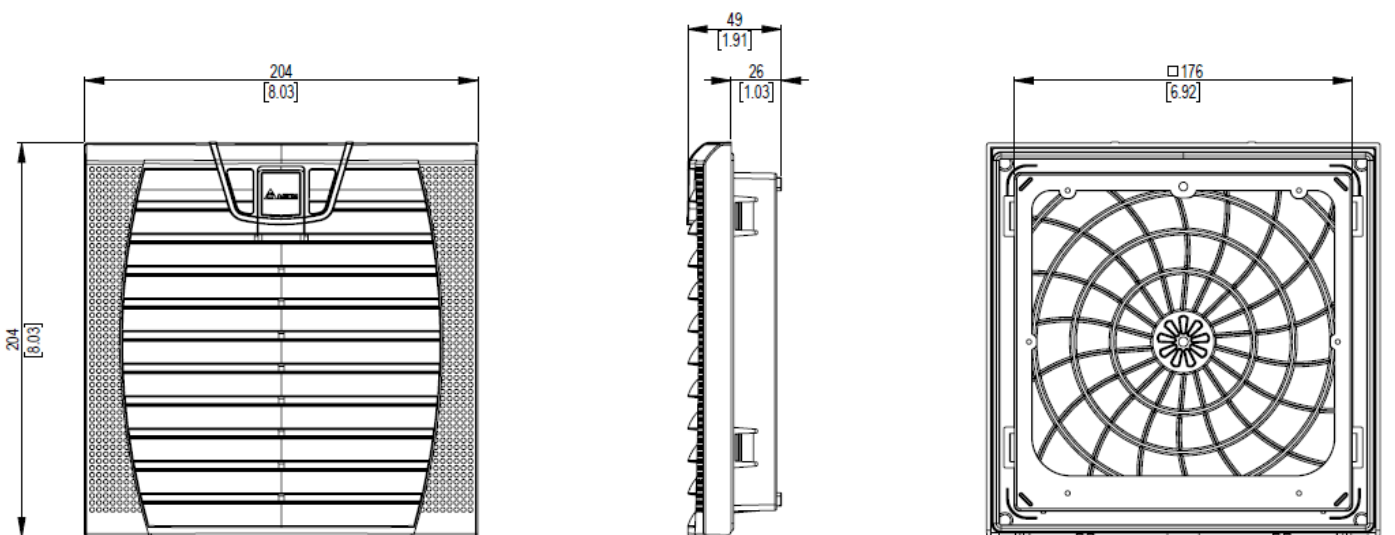
1-3. Unit Dimension

➤ Filter Fan Unit (HEF070 Series)



mm [inch]

➤ Exhaust Grille package (HEF070 Series)

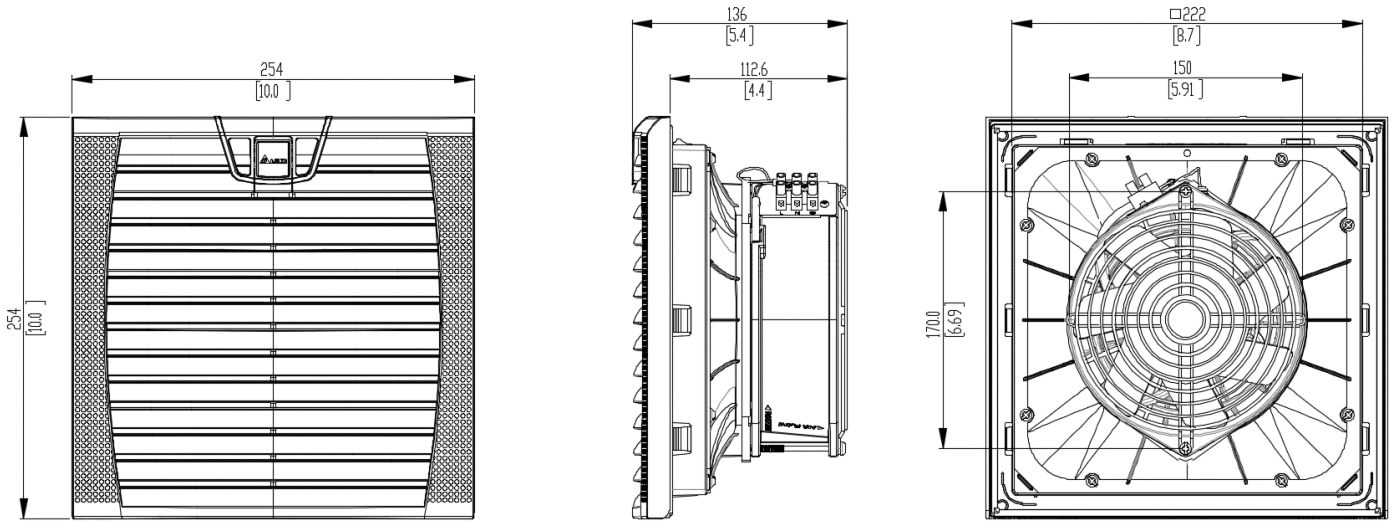


mm [inch]

Part no.:

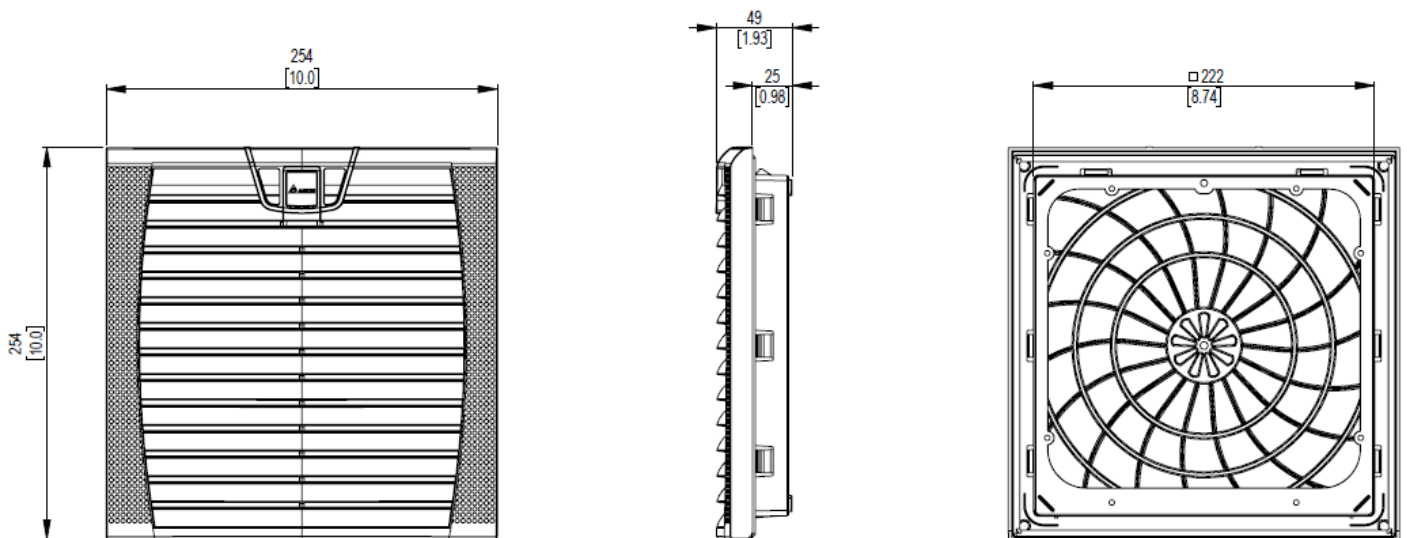
Delta model no.: HEF070 / HEF160 / HEF500 Series

➤ Filter Fan Unit (HEF160 Series)



mm [inch]

➤ Exhaust Grille package (HEF160 Series)

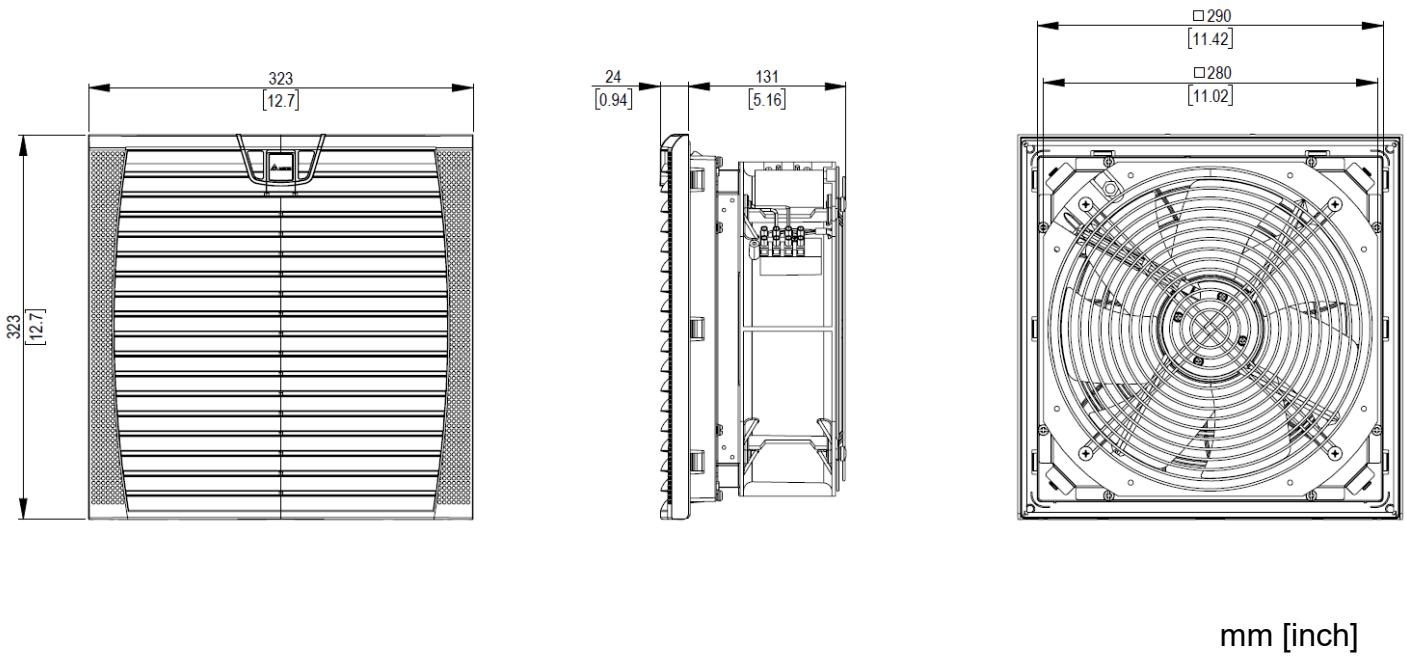


mm [inch]

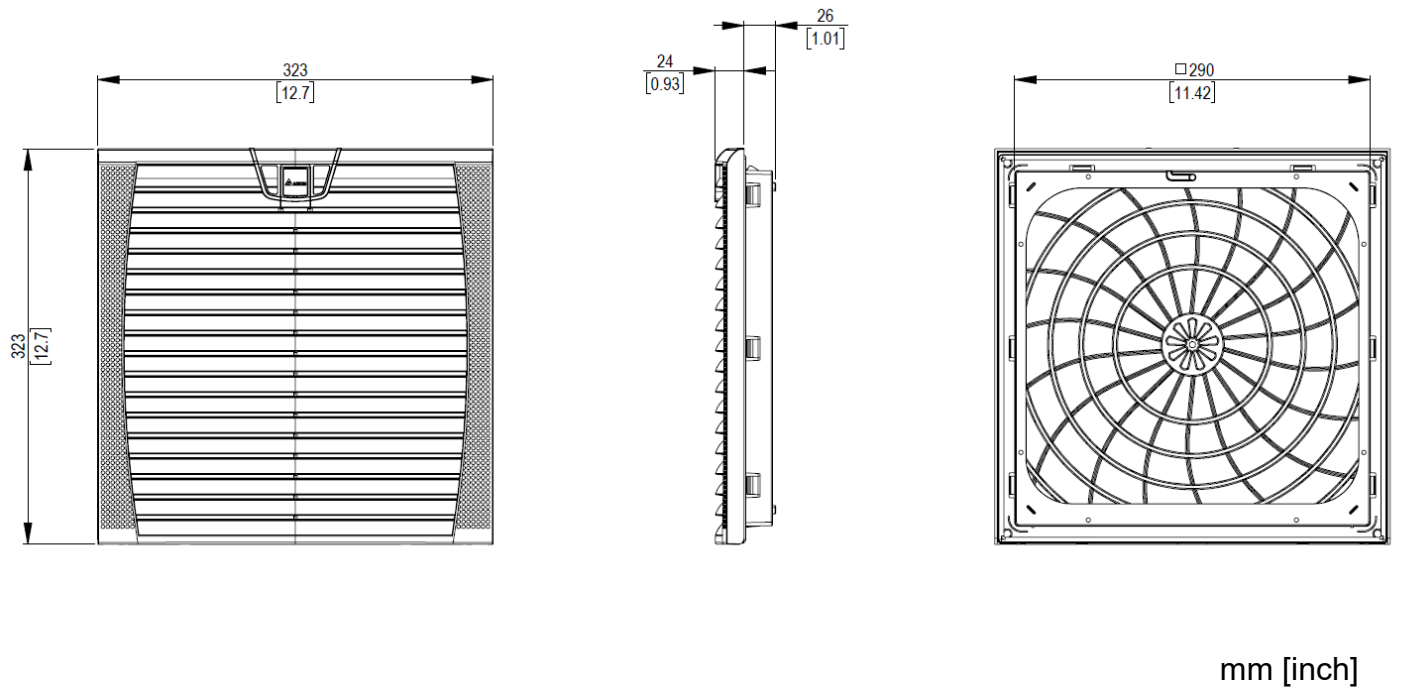
Part no.:

Delta model no.: HEF070 / HEF160 / HEF500 Series

➤ Filter Fan Unit (HEF500 Series)



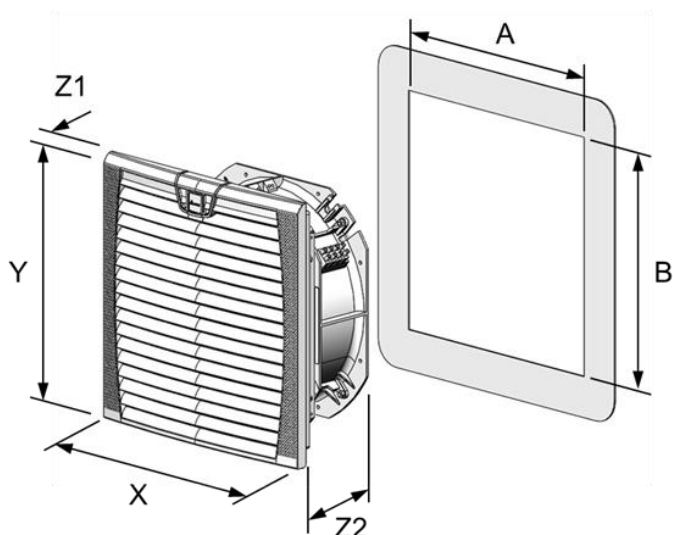
➤ Exhaust Grille package (HEF500 Series)



Part no.:

Delta model no.: HEF070 / HEF160 / HEF500 Series

1-4. Mounting Plane Cutout

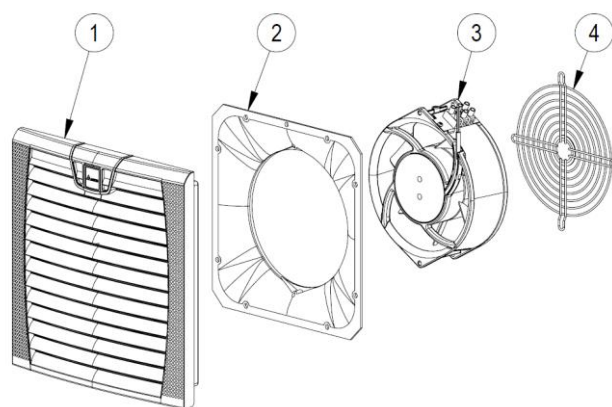


mm (inch)	HEF070 Series	HEF160 Series	HEF500 Series
X	204 (8.03)	254 (10.0)	323 (12.7)
Y	204 (8.03)	254 (10.0)	323 (12.7)
Z1	23 (0.91)	24 (0.94)	24 (0.94)
Z2	84 (3.31)	106 (4.17)	131 (5.16)
A*	177 (6.97)	224 (8.82)	292 (11.5)
B*	177 (6.97)	224 (8.82)	292 (11.5)

*For material thicknesses up to 2+1 mm for thickness of material > 2 mm ≤ 3 mm.

1-5. Configuration & Maintenance

1. Cutout hole in enclosure using the appropriate cutout size for the model you purchased.
2. Deburr the cutting edge.
3. Insert fan or grille and push into opening until all four corners be snapped and locked. See Page 10.
4. Wire the filter fan following the Wire Diagrams on page 17 for appropriate installation.

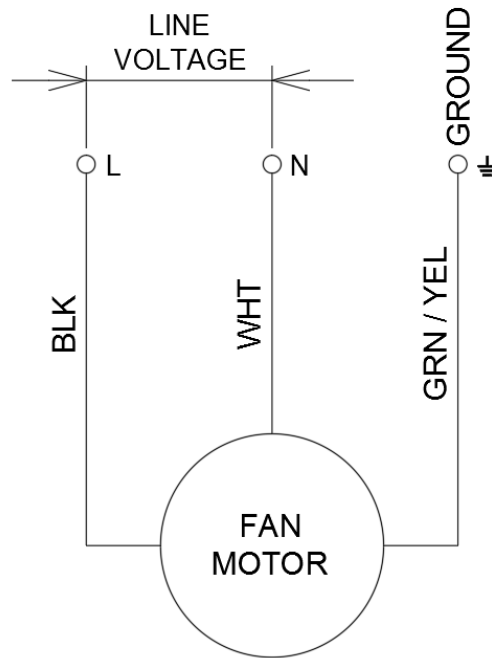


NO.	Q'TY	DESCRIPTION
1	1	Exhaust Grille
2	1	Fan nozzle
3	1	Axial Fan
4	1	Fan Guard

Part no.:

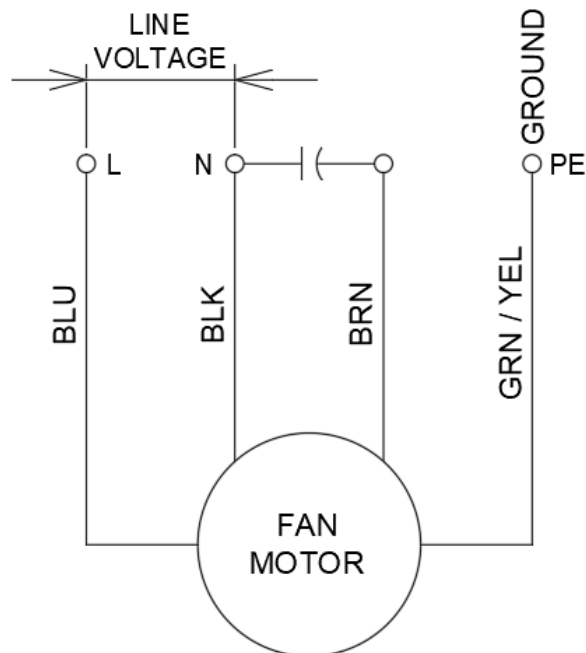
Delta model no.: HEF070 / HEF160 / HEF500 Series

1-6. Wire Diagrams



HEF160, HEF070 Series

AC POWERED



HEF500 Series

AC POWERED

Part no.:

Delta model no.: HEF070 / HEF160 / HEF500 Series

2. Environmental Condition

- **Operating Temperature**
-15°C ~ +55 °C (14 °F ~ +131 °F)
- **Storage Temperature**
-40 °C ~ +70 °C (-40 °F ~ 158 °F)
- **Operation Humidity**
Internal air : 0 ~ 80 % RH, non-condensing
- **Ingress Protection Rating**
IP54 (IEC60529) on external side
UV-resistant plastic

3. Reliability Table

Test item	Condition
Vibration Resistance	ISTA 2A / ISTA 2B
High Temperature Exposure	IEC 60068-2-14 test Na
Low Temperature Exposure	IEC 60068-2-14 test Na
Temperature Cycle	IEC 60068-2-14 test Nb
Ingress protection (external side)	IEC 60529 IP54 / NEMA 12
Salt Fog Test	IEC 60068-2-11
Package bump	ISTA 2A
Surge Voltage	IEC 61000-4-5, EN 55024
Electrostatic discharge	IEC 61000-4-2, EN 55024
Electrical Fast Transient	IEC 61000-4-4, EN 55024
Abnormal Voltage	

4. Safety Certification

Test item	Condition
CE Declaration of Conformity	2014/30/EU & 2014/35/EU & RoHS
NEMA / UL / cUL	UL508 Type 12

5. Accessory

TBD