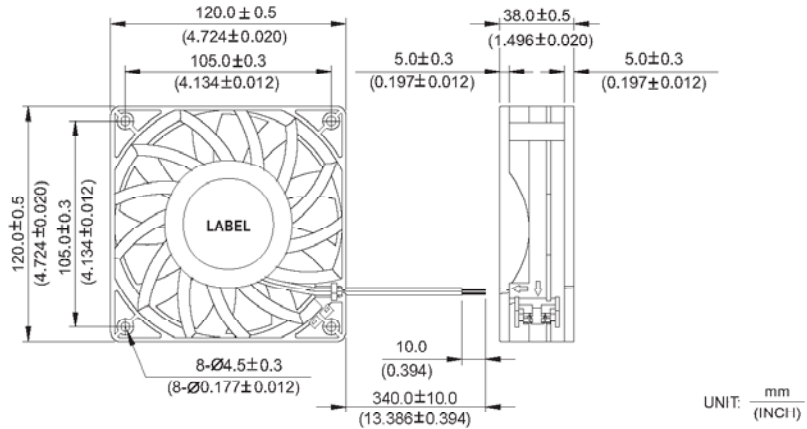


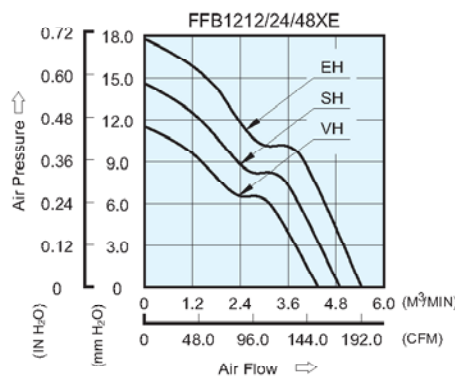
FFB 120 x 120 x 38 MM SERIES

DIMENSIONS DRAWING

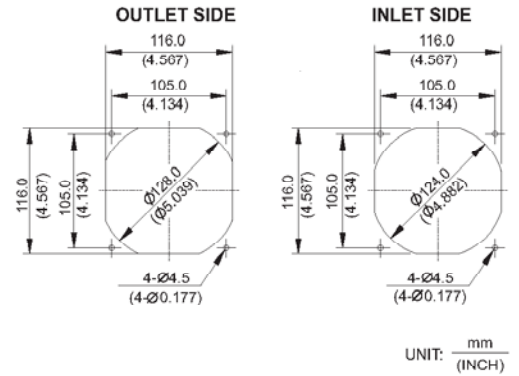


- * Bearing Type
Ball Bearings
- * Material
Impeller & Frame : Plastic (UL 94V-0)
- * Lead Wires :
UL 1007 AWG #24 OR Equivalent
Red Wire Positive (+)
Black Wire Negative (-)
- * Weight : 370g (13.05 oz)

P & Q CURVE (AT RATED VOLTAGE)



MOUNTING PANEL CUTOUT



MODEL		Rated Voltage	Operating Voltage Range	Rated Current	Rated Input Power	Speed	Maximum Air Flow		Maximum Air Pressure		Noise
PART NO.	FUNCTION	VDC	VDC	Amp	Watt	R.P.M.	m ³ /min	CFM	mmH ₂ O	IN H ₂ O	dB-A
FFB1212VHE	-R00 / -F00	12	7.0 to 13.2	1.00	12.00	3200	4.300	151.85	11.30	0.445	53.0
FFB1224VHE	-R00 / -F00	24	14.0 to 26.4	0.56	13.44						
FFB1248VHE	-R00 / -F00	48	28.0 to 56.0	0.28	13.44						
FFB1212SHE	-R00 / -F00	12	7.0 to 13.2	1.50	18.00	3600	4.840	170.92	14.30	0.563	56.5
FFB1224SHE	-R00 / -F00	24	14.0 to 26.4	0.80	19.20						
FFB1248SHE	-R00 / -F00	48	28.0 to 56.0	0.38	18.24						
FFB1212EHE	-R00 / -F00	12	7.0 to 13.2	2.00	24.00	4000	5.380	190.00	17.78	0.700	59.0
FFB1224EHE	-R00 / -F00	24	14.0 to 26.4	1.00	24.00						
FFB1248EHE	-R00 / -F00	48	28.0 to 53.0	0.50	24.00						

* Function type is optional.
 * The max. air flow and the speed are measured in free air ; max. air pressure is measured at zero air flow.
 * Noise is measured in anechoic chamber in free air, one meter from intake side.
 * All readings are typical values at rated voltage.
 * Specifications are subject to change without notice.

DC Fan With Minimum Noise

Introductions

- Every model undergoes rigorous aerodynamic analysis and anechoic chamber test to achieve minimum noise under high airflow and air pressure conditions.
- High precision maintenance-free ball bearing system provides superb reliability.
- Frame and fan blade meet UL 94V-0 flammability rating.
- Every model features locked rotor protection and polarity protection, and offers optional frequency generator or rotation detector function.
- All DC fans are 100% balanced to guarantee low vibration and excellent durability.
- Automatic multi-axes winding, surface-mount machine and highly automated assembly lines enable mass production and consistent quality.
- UL, CSA, VDE approved.

Part Number Definition

AFB	12	12	H	E	-	B	F	00
1	2	3	4	5		6	7	8

1. SERIES CODE :
AFB,AHB,EFB,EHB,FFB,FHB,GFB,
LFB,NFB,TFB,BFB, KFB,KHB,SFB,

2. FRAME DIMENSION:
02 : 125 x 38 x 45 mm
03 : 30 mm SQUARE
or 180 x 38 x 45 mm
032 : Ø32 x 9 mm
035 : 35 mm SQUARE
04 : 40 mm SQUARE
or 42 x 45 x 19 mm
045 : 45 mm SQUARE
05 : 50 mm SQUARE
or 51 x 51 x 15 mm
06 : 60 mm SQUARE
07 : 70 mm SQUARE
or 75 x 75 x 30 mm
08 : 80 mm SQUARE
09 : 92 mm SQUARE
10 : 97 x 94 x 33
or Ø100 x 46.8 mm
12 : 120 mm SQUARE
or 125 x 126 x 34 mm
or 120 x 120 x 32 mm
13 : 127 mm SQUARE
or Ø133 x 61.5 mm
14 : 140 mm SQUARE
15 : 172 x 150 mm
16 : 159 x 165 x 40 mm
17 : Ø172 mm
or Ø175 x 69.0 mm

3. OPERATION VOLTAGE :
05 : DC 5V
12 : DC 12V
24 : DC 24V
48 : DC 48V

4. SPEED (RPM) :
L : LOW
M : MEDIUM
H : HIGH
HH : EXTRA HIGH
VH : VERY HIGH
SH : SUPER HIGH
EH : EXTERNAL HIGH
GH : GRAND HIGH SPEED
UH : ULTRA HIGH SPEED
DH : DRASTIC HIGH SPEED
XH : EXTREME HIGH SPEED

5. FRAME THICKNESS:
A : 10 mm
C : 13 mm
B : 15 mm
D : 20 mm
(BLANK) : 25.4 mm
N : 28 mm
F : 32 mm
E : 38 mm
or RIGHT SIDE
EXHAUST (INTAKE
VIEW FOR BFB
SERIES)
G : 50.8 mm OR 48mm
S : 55 mm
T : 61.0-71.0 mm
W : 72.0-85.0 mm
U : 86.0-105.0 mm
V : 106.0-125.0 mm

6. FRAME TYPE:
(BLANK) : FLANGE TYPE
B : RIB TYPE (10mm, 13mm, 15mm, 20mm
THICKNESS)
M : METAL FRAME

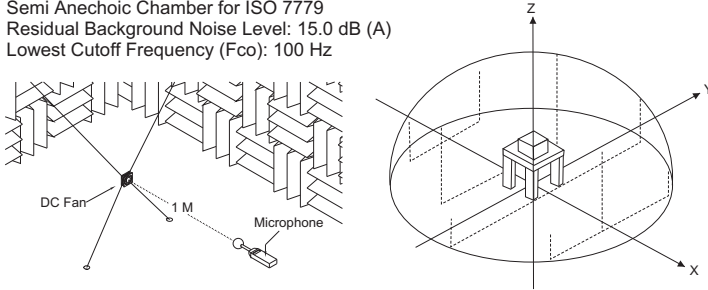
7. SIGNAL OUTPUT :
F : FREQUENCY GENERATOR OUTPUT
(SPEED SENSOR) OR TACH OUTPUT
R : ROTATION DETECTOR OUTPUT
(FAILURE DETECTOR)

8. SIGNAL OUTPUT VOLTAGE :
00 : VCC (OPEN COLLECTOR)

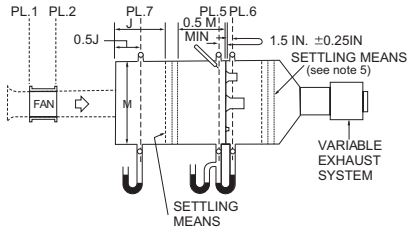
Note

1. NOISE IS MEASURED AT RATED VOLTAGE IN ANECHOIC CHAMBER IN FREE AIR WITH LARSON DAVIS AND WITH MICROPHONE AT A DISTANCE OF ONE METER FROM THE FAN INTAKE. REFER TO ANSI-S12.10 AS SHOWN BELOW:

SEMI ANECHOIC CHAMBER LEVEL
Semi Anechoic Chamber for ISO 7779
Residual Background Noise Level: 15.0 dB (A)
Lowest Cutoff Frequency (Fco): 100 Hz

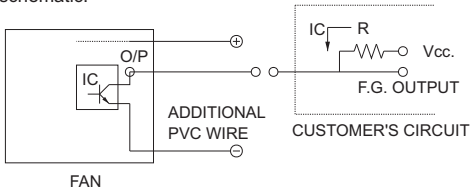


2. THE PERFORMANCE INCLUDING AIR FLOW AND AIR PRESSURE MEASURED AT RATED VOLTAGE IN DOUBLE CHAMBER IS MEASURED ACCORDING TO AMCA 210 STANDARD AS SHOWN BELOW:



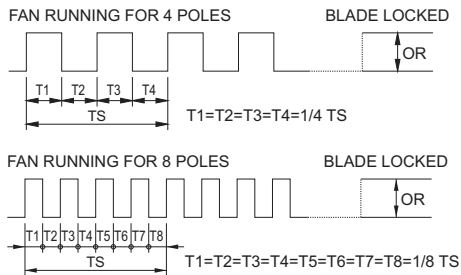
3. FREQUENCY GENERATOR O/P: (F00)

Frequency generator function is activated by an internal IC for customer's application.
Electrical schematic:



CUSTOMER'S CIRCUIT
Vcc = From +5 To +28 VDC (Generally using +12 or +24 VDC)
Ic = 5 mA max.
R = V/I (Output "R" value calculation)

SUPPLY A WAVEFORM:

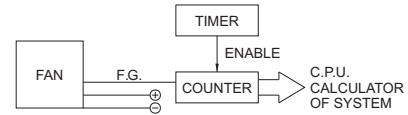


N=R.P.M. (Rotation speed will be different for various models L/M/H/HH/VH/SH)
TS=60/N (Sec)
* Voltage level after blade locked
* 4 POLES OR 8 POLES

OUTPUT LEVEL:

High = $V_{cc} \pm 10\%$
Low = 0~0.5V
Ic = 5 mA max.

APPLICATION:

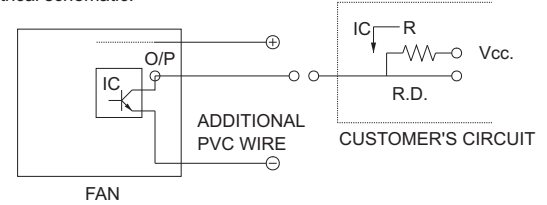


FUNCTIONS:

- By means of waveform & customer's design, schematic can reach alarm function, either in the form of buzzing or LED flashing. Adjust rotation speed.
- When power supply output voltage level decreases, it will result in the lowering of fan rotation speed. The irregular situation will be controlled by using F.G. O/P through P/S circuit to increase the output voltage and result in a stable rotation speed.

4. ROTATION DETECTOR O/P (R00)

Rotation detector function is activated by an internal IC for customer's application.
Electrical schematic:



CUSTOMER'S CIRCUIT

Vcc = From +5 To +28 VDC (Generally use +12 or +24 VDC)
Ic = 5 mA max.
R = V/I (Output "R" value calculation)

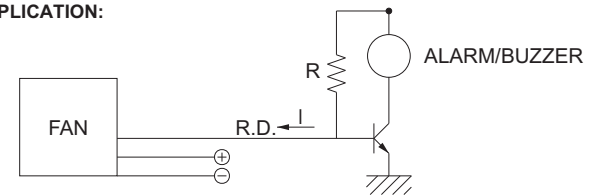
SUPPLY A WAVEFORM:



OUTPUT LEVEL:

High = $V_{cc} \pm 10\%$
Low = 0~0.5V
Ic = 5 mA max.

APPLICATION:



FUNCTION:

By means of waveform & customer's design, schematic can reach alarm function: either in the form of buzzing or LED flashing.

5. FRAME TYPE:

