

**SPECIFICATION FOR APPROVAL**  
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Customer:

Description:	EC FAN		
Customer P/N:		REV:	
Delta Model NO.:	GTW020EUB12	Safety Model NO.:	GTW020EUB12
Sample Rev:	03	Issue NO:	
Sample Issue Date:	JUN.26 2013	Quantity:	

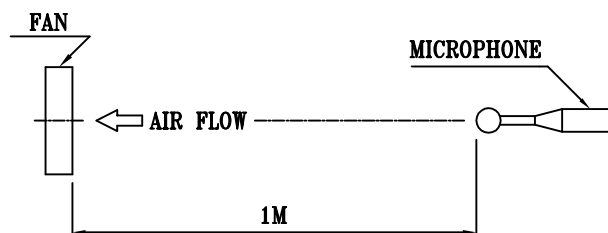
1. SCOPE:

THIS SPECIFICATION DEFINES THE ELECTRICAL AND MECHANICAL CHARACTERISTICS OF THIS AXIAL FAN.

2. NOMINAL DATA:

ITEM	DESCRIPTION
NOMINAL VOLTAGE	1 $\phi$ 230 VAC 50/60Hz
NOMINAL VOLTAGE RANGE	1 $\phi$ 200 - 240 VAC
INPUT POWER @ FREE-AIR	149 W
INPUT POWER @ MAX. LOAD	240 W
SPEED	6000 R.P.M. (REF.)
MAX. AIR FLOW (AT ZERO STATIC PRESSURE)	1081.74 ( MIN. 973.57) M <sup>3</sup> /H 636.69 ( MIN. 573.02) CFM
MAX.AIR PRESSURE (AT ZERO AIR FLOW)	1037.21 ( MIN. 840.14) Pa 4.164 ( MIN. 3.373) inchH <sub>2</sub> O
ACOUSTICAL NOISE (AVG.) @ FREE-AIR	70.0 (MAX 74.0) dB(A)

- NOTES: 1. ALL READINGS ARE MEASURED AFTER STABLY WARMING UP THROUGH 10 MINUTES.  
 2. STANDARD AIR PROPERTY IS AIR AT (Td) 25°C TEMPERATURE, (RH) 65% RELATIVE HUMIDITY, AND (Pb) 760 mmHg BAROMETRIC PRESSURE.  
 3. THE VALUES WRITTEN IN PARENS , ( ), ARE LIMITED SPEC.  
 4. ACOUSTICAL NOISE MEASURING CONDITION:



NOISE IS MEASURED AT NOMINAL VOLTAGE IN FREE AIR IN ANECHOIC CHAMBER WITH B & K SOUND LEVEL METER WITH MICROPHONE AT A DISTANCE OF ONE METER FROM THE FAN INTAKE.

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PART NO:

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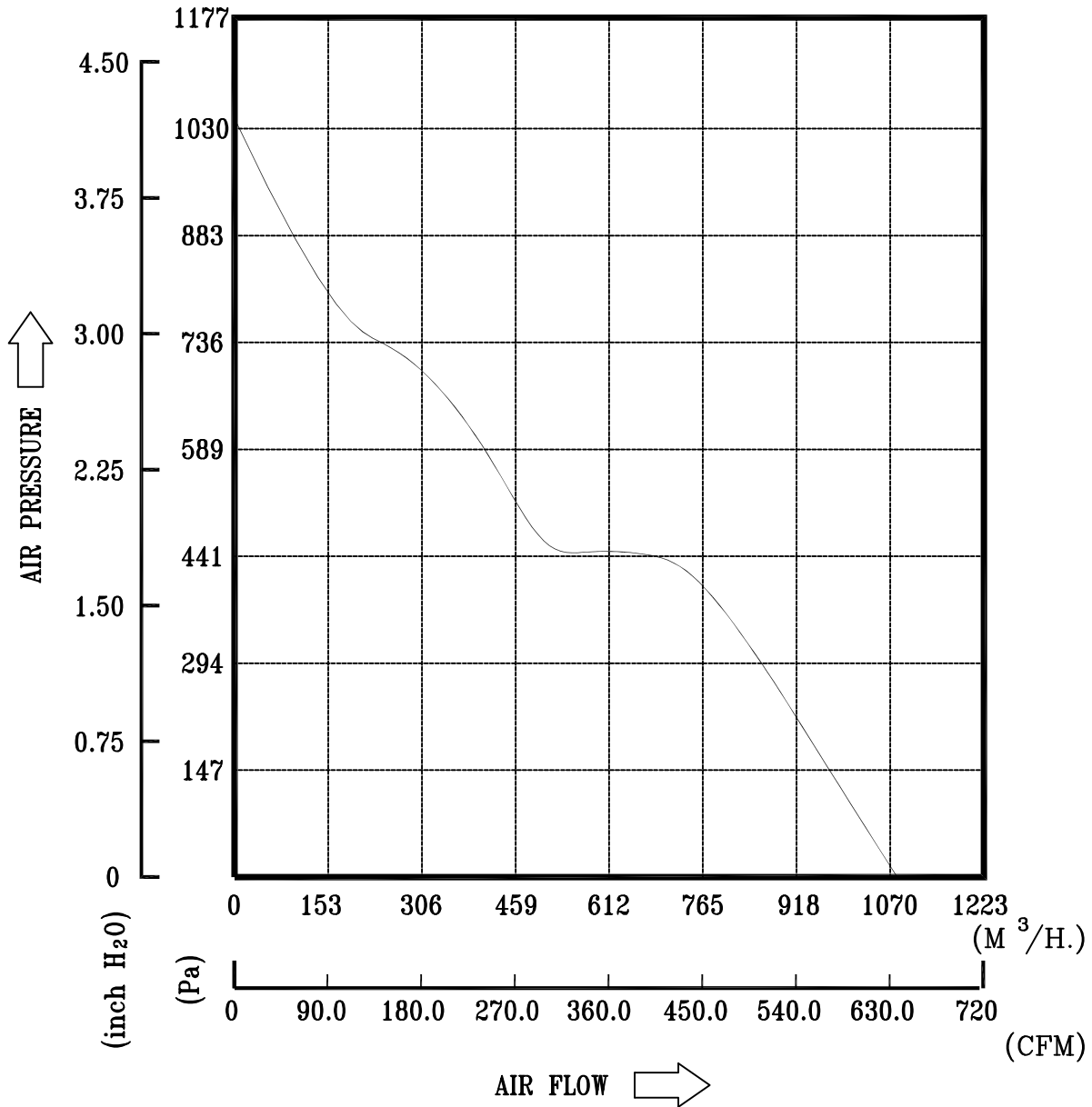
3. FEATURES:

DIRECTION OF ROTATION	COUNTERCLOCKWISE, SEEN ON ROTOR
BEARING SYSTEM	BALL BEARINGS
WEIGHT	2.7 K.G. (REF.)
MATERIAL OF ELECTRONICS HOUSING	DIE-CAST ALUMINUM
MATERIAL OF IMPELLER	PLASTIC
ELECTRICAL LEADS	LEAD WIRE
MOTOR PROTECTION	OVER TEMP. PROTECTED
LEAKAGE CURRENT	<= 3.5 mA
INSULATION CLASS	A
TYPE OF PROTECTION	IP54
PROTECTION CLASS	I
POWER FACTOR CORRECTION	ACTIVE
OPERATING TEMPERATURE	-25~+60 °C (REF.)
STORAGE TEMPERATURE	-40~+70 °C (REF.)
EMC	EN61000-6-1 / EN61000-6-3 / EN61000-3-2/3
SAFETY	cULus(UL/CSA) , TUV, CE
LIFE EXPECTANCE	60,000 HOURS CONTINOUS OPERATION AT 40 °C WITH 15 ~ 65 %RH.
FUNCTIONS	INPUT 0-10VDC/PWM FOR SPEED CONTROL FAN SPEED SIGNAL OUTPUT OUTPUT +12VDC(+/-10%), max. 5mA

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4. P & Q CURVE:



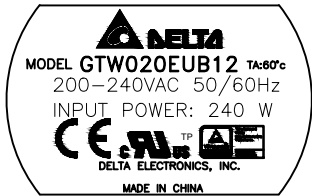
\* TEST CONDITION: INPUT VOLTAGE ——— OPERATION VOLTAGE  
TEMPERATURE ——— ROOM TEMPERATURE  
HUMIDITY ——— 65%RH

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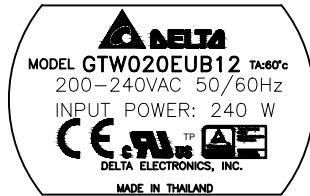
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5. DIMENSION DRAWING:

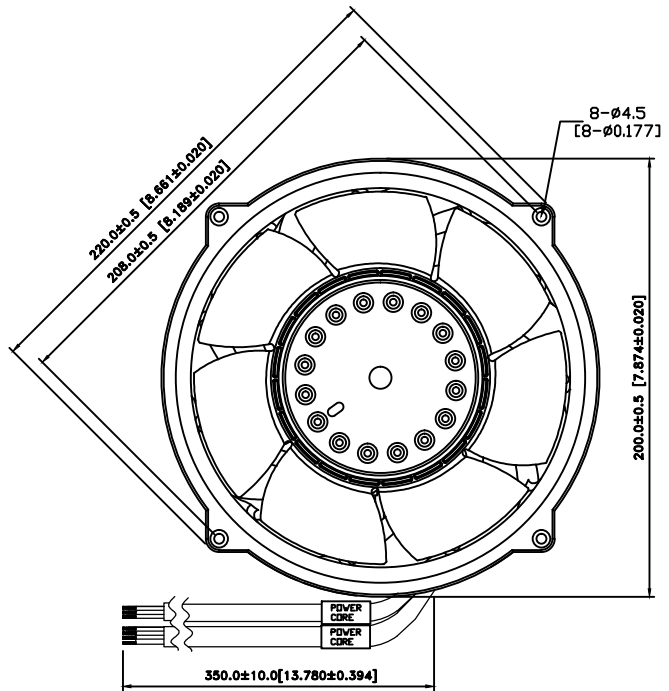
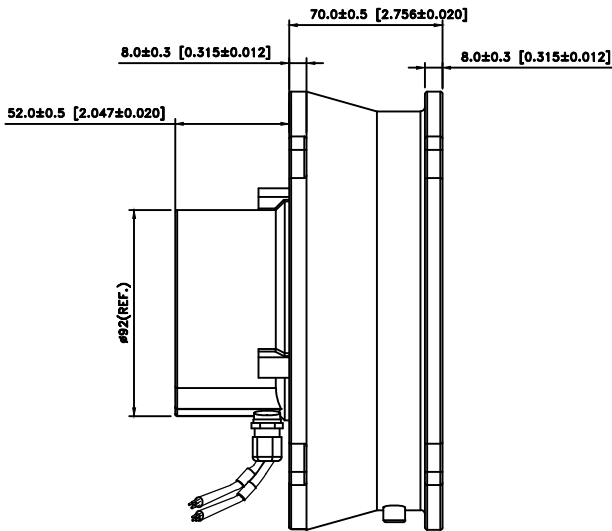
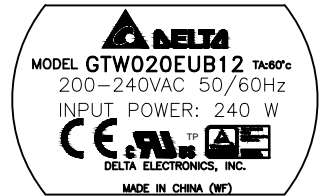
LABEL:



OR



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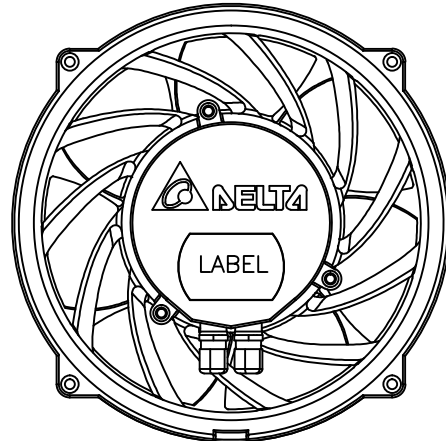


1. LEAD WIRE

- BROWN WIRE : L
- BLUE WIRE : N
- GREEN & YELLOW WIRE : PE

2. LEAD WIRE

- RED WIRE : 12VDC OUT
- GREEN WIRE : GND
- YELLOW WIRE : SPEED CONTROL (0-10VDC/PWM)
- WHITE WIRE : FG O/P

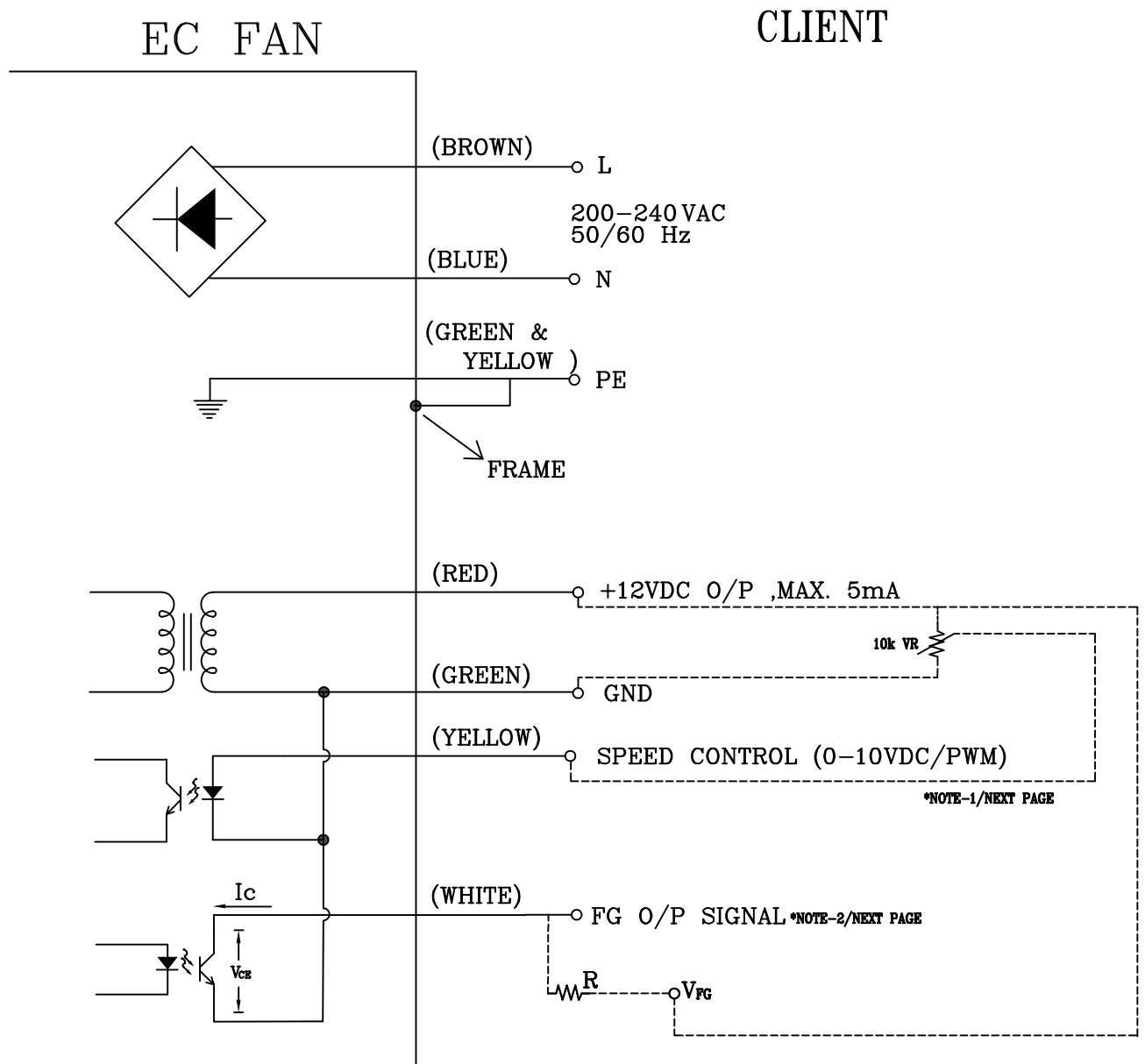


UNIT: mm [INCH]

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6. LEAD WIRE CONNECTION:



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7. FUNCTION CONTROL:

\*NOTE-1: SPEED CONTROL SIGNAL

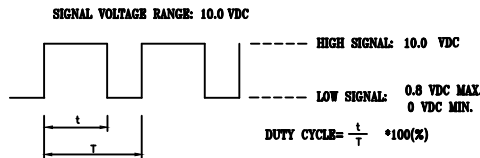
- THERE ARE TWO WAY TO CONTROL FAN SPEED.

A. VOLTAGE CONTROL

- CONTROL VOLTAGE RANGE SHALL BE 0-10 VDC.
- VOLTAGE AT 10 VDC THE FAN WILL SPIN AT MAXIMUM SPEED.

B. PWM CONTROL

- THE AMPLITUDE VOLTAGE SHALL BE 10VDC. (100Hz~100kHz)



- THE SPEED COMPARISON WITH CONTROL LEVEL:

VOLTAGE(V)	PWM DUTY	SPEED R.P.M. (REF.)	POWER (W)
0.0	0%	800 ± 10%	4.5
5.0	50%	3450 ± 10%	45.0
10.0	100%	6000 ± 10%	149.0

\*NOTE-2: FREQUENCY GENERATOR (FG) SIGNAL

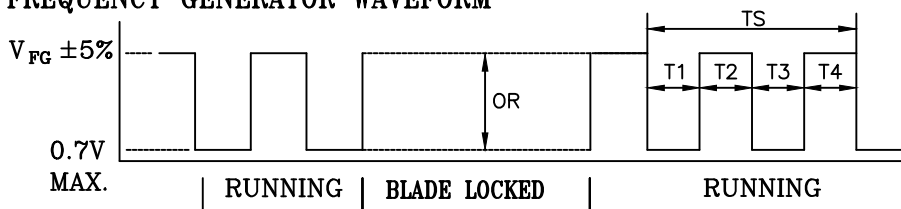
$V_{CE}(\text{sat})=0.7\text{V MAX.}$

$V_{FG}=20.0\text{V MAX.}$

$I_c =5\text{mA MAX.}$

$R \geq V_{FG}/I_c$

FREQUENCY GENERATOR WAVEFORM



$N=\text{R.P.M}$	2 PULSES PER REVOLUTION
$TS=60/N(\text{SEC})$	$T1=T2=T3=T4=1/4 TS$

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8. DUTY & SPEED CURVE: (PWM PIN )

