



## Specification For Approval

Customer : \_\_\_\_\_ STD  
Description : \_\_\_\_\_ EC FAN  
Customer Part No. : \_\_\_\_\_ Rev : \_\_\_\_\_  
Delta Model No. : \_\_\_\_\_ GTW017EUB12 Rev : 00  
Safety Model No. : \_\_\_\_\_ GTW017EUB12  
Sample Issue No. : \_\_\_\_\_  
Sample Issue Date : \_\_\_\_\_ 05/17/2016

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

Approved by : \_\_\_\_\_

Date : \_\_\_\_\_

Delta Electronics, Inc.  
No.252, Shangying Road, Guishan Industrial Zone,  
Taoyuan City, 33341, Taiwan

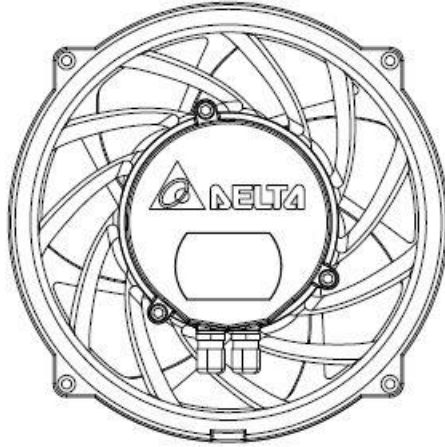
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## Electronically Commutated (EC) Fan

Axial Fan

(200 x 122 mm)



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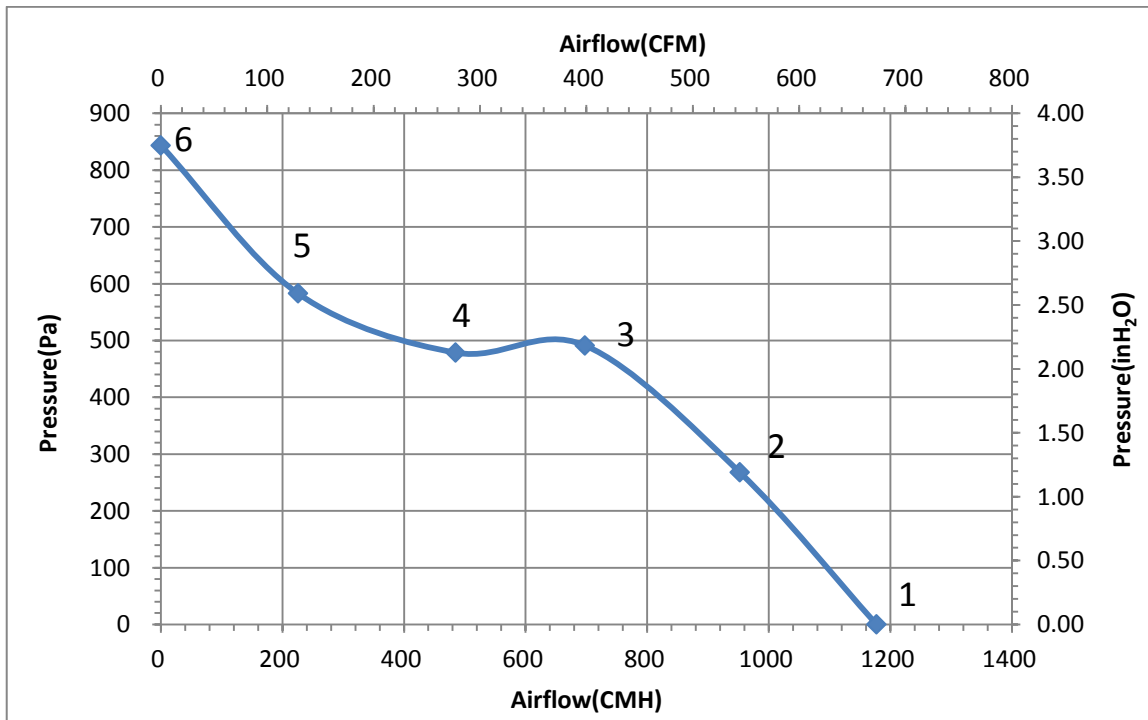
### Technical features

Input Side	
Input Source	1~ 200Vac - 240Vac
Power @ Free air	185W
Power @ Max. load	240 W
Power On Label	240W
Output Side	
Speed (RPM)	5800
Qmax. (CMH / CFM)	1177/ 693
Pmax. (Pa / inAq)	844 / 3.39
Noise (dB-A)-FREE AIR	70.5
Functions	
Speed Control input 0-10VDC or PWM pattern.	
Output +12VDC(±10%), max. 5mA.	
Locked rotor protection, Soft start.	
Fan speed signal output	

Physical	
Rotation Direction	CCW seen on rotor
Material (Impeller / Frame)	Plastic / Die-Cast Aluminum
Bearing system	Ball bearings
Weight (kg)	2.7
Electrical leads	Lead wire
Environmental	
Operating temperature range	-25 ~ +60 °C
Storage temperature range	-40 ~ +70 °C
Safety	
Safety	UL & CSA & TUV & CE
IP Level	IP54
EMC	EN61000-6-1 , EN61000-6-3 , EN61000-3-2/3
Protection class	I
Insulation class	A
Leakage current	≤ 3.5 mA
Motor protection	Over temperature protected
Life expectancy	60,000 hrs. at 40 °C / 15 ~ 65 %RH

NOTE : Delta reserves the right to change specifications and other product information without prior notice.

P & Q curves



Measure data:

	P [Pa]	Q [CMH]	N [R.P.M.]	P1 [W]	I [A]	Lp [dB(A)]
1	0	1177	5770	185	0.9	70.5
2	268	952	5650	203	1.0	
3	491	697	5653	207	1.0	
4	479	485	5757	189	0.9	
5	583	225	5670	205	1.0	
6	844	0	5478	235	1.1	

Test Condition :

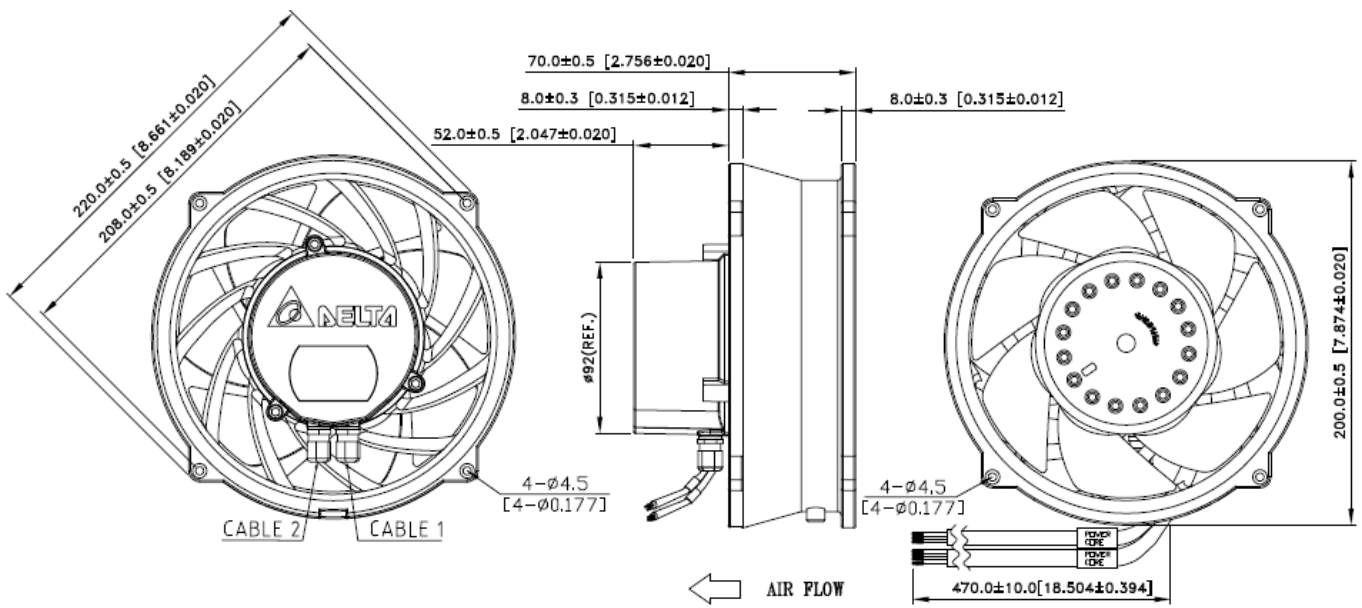
- Input Voltage: Nominal Voltage
- Temperature : Room Temperature
- Humidity : 65%RH
- Measured without fanguard
- Noise (Lp) is measured at a distance of one meter from the intake side.

Dimension drawing

Label :



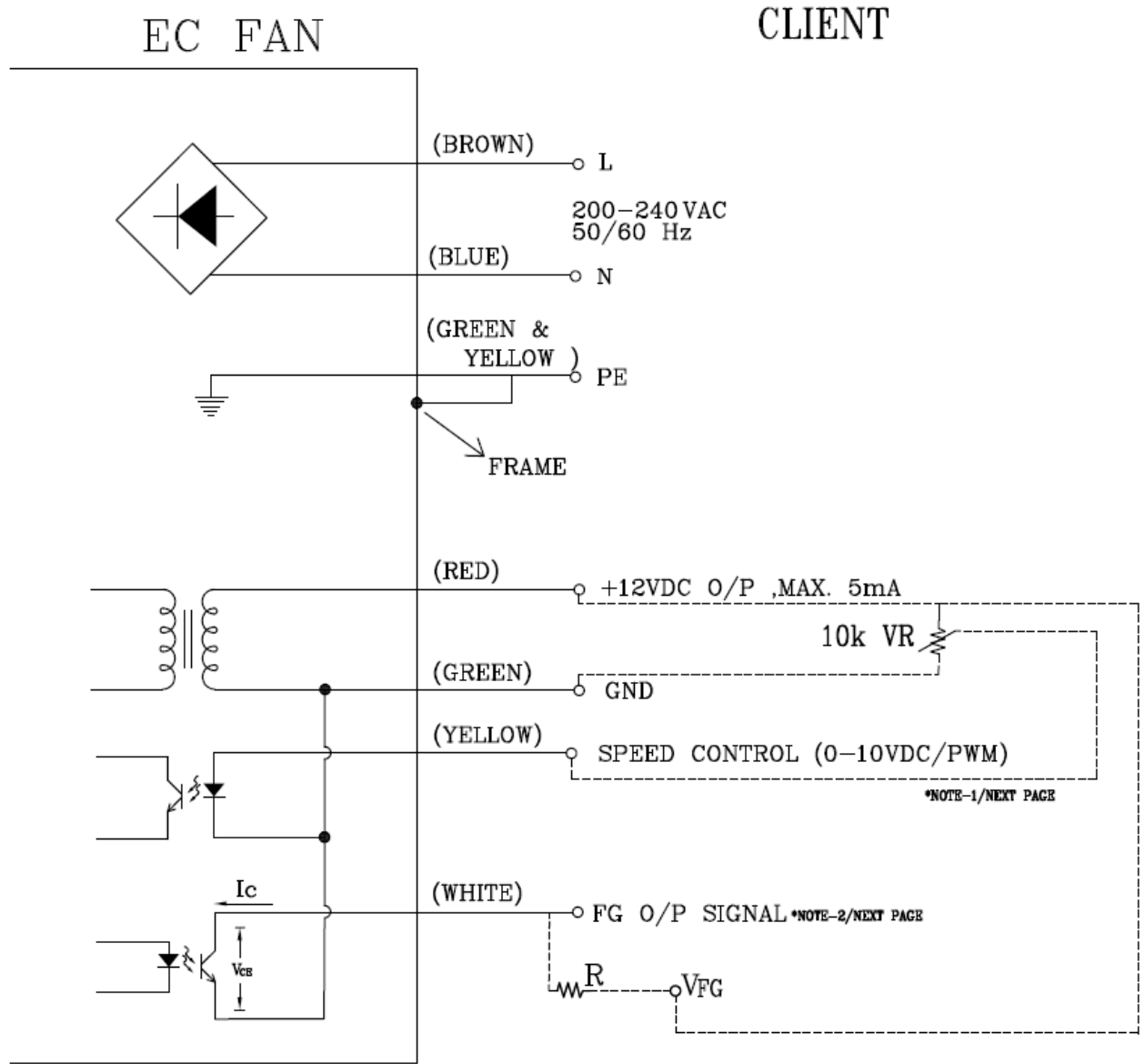
Fan :

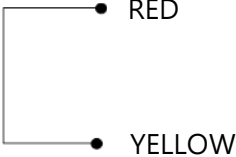
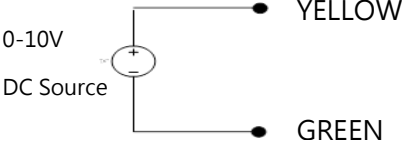
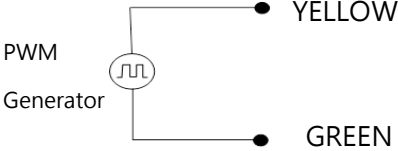


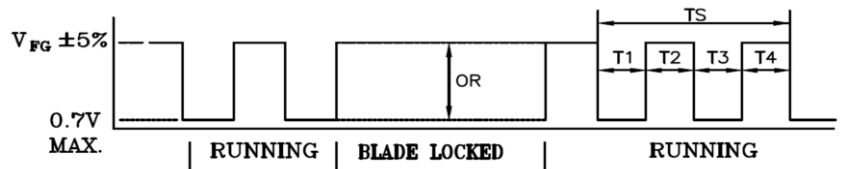
UNIT: mm[INCH]

Cable	WIRE TYPE	Color	Functions
1	UL2464 24#AWG	Green	Ground
		Red	+12 VDC output MAX.5mA
		White	FG O/P
		Yellow	Speed control(0-10VDC/PWM)
2	UL2464 18#AWG	Brown	Line/ AC main (1~ 200-240VAC)
		Blue	Neutral/ AC main (1~ 200-240VAC)
		Green / Yellow	Protective Earth

Lead wire connection



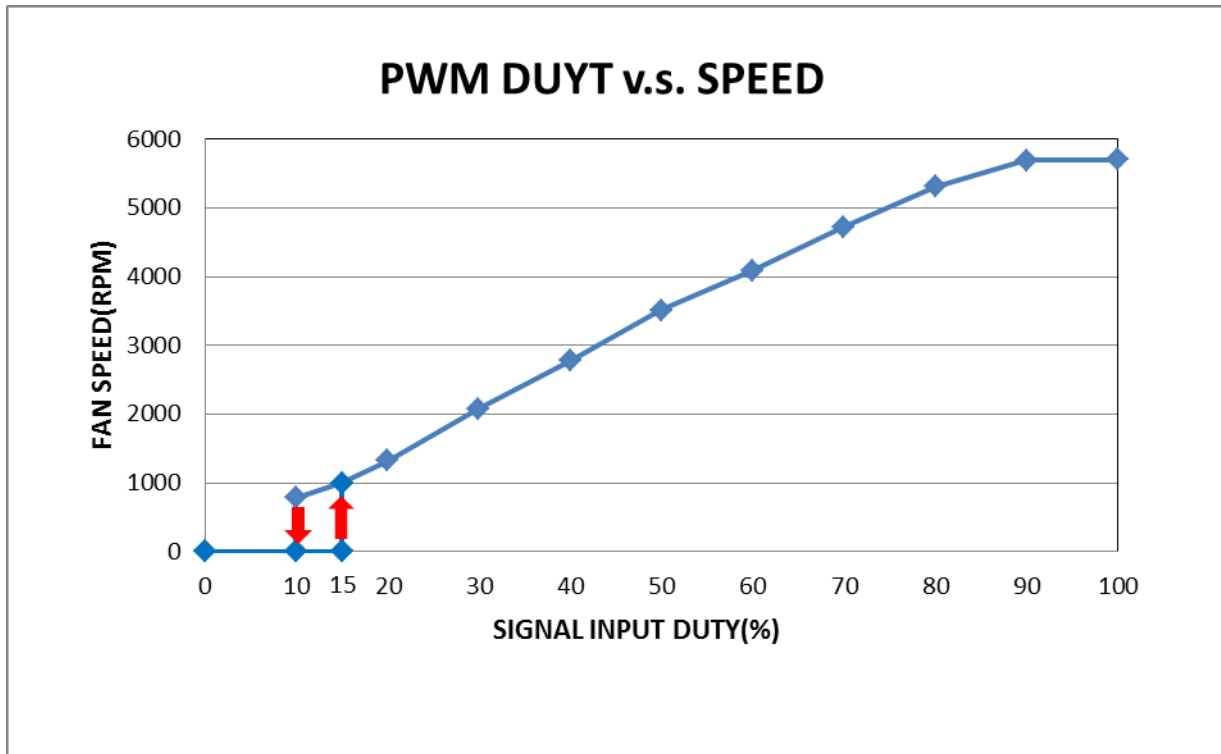
Speed setting	
<p><b>Full Speed</b></p> 	<p><b>Short RED &amp; YELLOW</b> Fan will run full speed.</p>
<p><b>Voltage Control</b></p> 	<p><b>Use voltage source support 0~10VDC voltage</b> DC+ : connector YELLOW DC - : connector GREEN -Voltage higher than 1.5 VDC, fan start up. -Voltage at 10 VDC , the fan will spin at full speed</p>
<p><b>PWM Control</b></p> 	<p><b>PWM dury control</b> PWM amplitude is 10VDC(+/-5%) Frequency Range is 100Hz ~ 100kHz -PWM dury higher than 15%, fan start up ° -PWM dury at 100% , the fan will spin at full speed</p>

Signal function									
Voltage control	<p>The speed comparison will control level</p> <table border="1"> <thead> <tr> <th>Voltage (V)</th> <th>Speed (RPM)</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>0</td> </tr> <tr> <td>5.0</td> <td>3550±8%</td> </tr> <tr> <td>10</td> <td>5800±5%</td> </tr> </tbody> </table>	Voltage (V)	Speed (RPM)	0	0	5.0	3550±8%	10	5800±5%
Voltage (V)	Speed (RPM)								
0	0								
5.0	3550±8%								
10	5800±5%								
FG	<p> <math>V_{CE(sat)} = 0.7V \text{ MAX.}</math>      <math>V_{FG} = 20.0V \text{ MAX.}</math>  <math>I_C = 5mA \text{ MAX.}</math>              <math>R \geq V_{FG} / I_C</math> </p> <p>Frequency generator waveform</p>  <p> <math>V_{FG} \pm 5\%</math>  <math>0.7V \text{ MAX.}</math> </p> <p> <b>RUNNING</b>   <b>BLADE LOCKED</b>   <b>RUNNING</b> </p> <table border="1"> <tbody> <tr> <td><math>N = \text{R.P.M}</math></td> <td><b>2 PULSES PER REVOLUTION</b></td> </tr> <tr> <td><math>TS = 60/N(\text{SEC})</math></td> <td><math>T1 = T2 = T3 = T4 = 1/4 \text{ TS}</math></td> </tr> </tbody> </table>	$N = \text{R.P.M}$	<b>2 PULSES PER REVOLUTION</b>	$TS = 60/N(\text{SEC})$	$T1 = T2 = T3 = T4 = 1/4 \text{ TS}$				
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DUTY & SPEED CURVE: (PWM PIN)

Voltage(V)	PWM Duty(%)	Speed R.P.M.(ref.)
0.0	0	0
5.0	50	3550±8%
10.0	100	5800±5%



Voltage	0	0.5	1	1.5	2	3	4	5	6	7	8	9	10	VDC
PWM duty	0	5	10	15	20	30	40	50	60	70	80	90	100	%