



Specification For Approval

Customer : _____
Description : _____ EC FAN _____
Customer Part No. : _____ Rev : _____
Delta Model No. : _____ GTB019BUA07R-V E1 _____ Rev : 01
Safety Model No. : _____ UL: GTB019BUA07 _____
Sample Issue No. : _____
Sample Issue Date : _____ 09/20/2019 _____

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

Approved by : _____

Date : _____

Delta Electronics, Inc.

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Taoyuan City, 33341, Taiwan

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Electronically Commutated (EC) Fan

Centrifugal Fan

Ø 190 x 70 mm



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RoHS

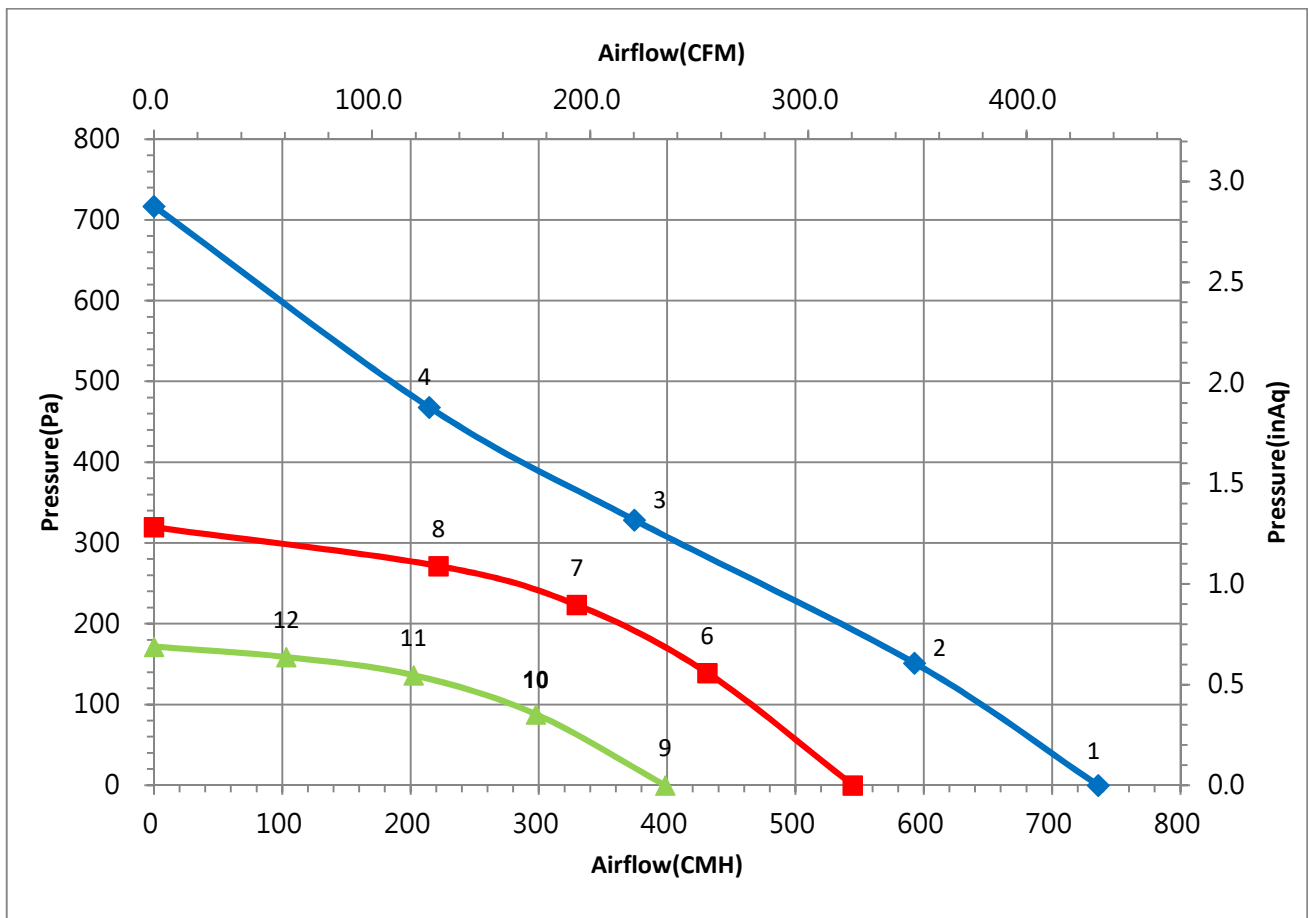
Technical features

Input Side	
Nominal Voltage	1~ 115Vac 50/60Hz
Input Source	1~ 100Vac - 140Vac
Power @ Free air	85 W
Power @ Max. load	85 W
Output Side	
Speed (RPM)	3100
Qmax. (CMH / CFM)	736 / 433
Pmax. (Pa / inAq)	717 / 2.88
Noise (dB-A) @ Qmax.	69.0
Functions	
Control input 0-10VDC / PWM pattern.	
Output +10VDC (±10%), max. 5mA.	
Locked rotor protection, Soft start.	

Physical	
Rotation Direction	CW, Seen on rotor
Material (Impeller / Frame)	Plastic / Die-cast aluminum
Bearing system	Ball bearings
Weight (kg)	1.1
Electrical leads	Lead wire
Environmental	
Operating temperature range	-25 ~ +60 °C
Storage temperature range	-40 ~ +80 °C
Safety	
Safety	UL; cUL; TUV (in progress)
IP Level	IP54
EMC	EN61000-6-2/4
	EN61000-3-2/3 (in progress)
Protection class	I
Insulation class	B
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	736	3484	85	1.00	69.0
2	151	593	3263	84	0.99	67.5
3	329	374	3075	83	0.98	63.0
4	468	214	3332	83	0.99	68.0
5	0	545	2572	32	0.46	63.5
6	139	431	2587	45	0.61	61.0
7	223	330	2583	47	0.63	59.0
8	272	222	2589	43	0.59	60.0
9	0	398	1920	14	0.24	58.5
10	88	298	1918	19	0.30	54.0
11	136	202	1920	19	0.30	53.0
12	159	103	1919	16	0.25	53.0

Test Condition :

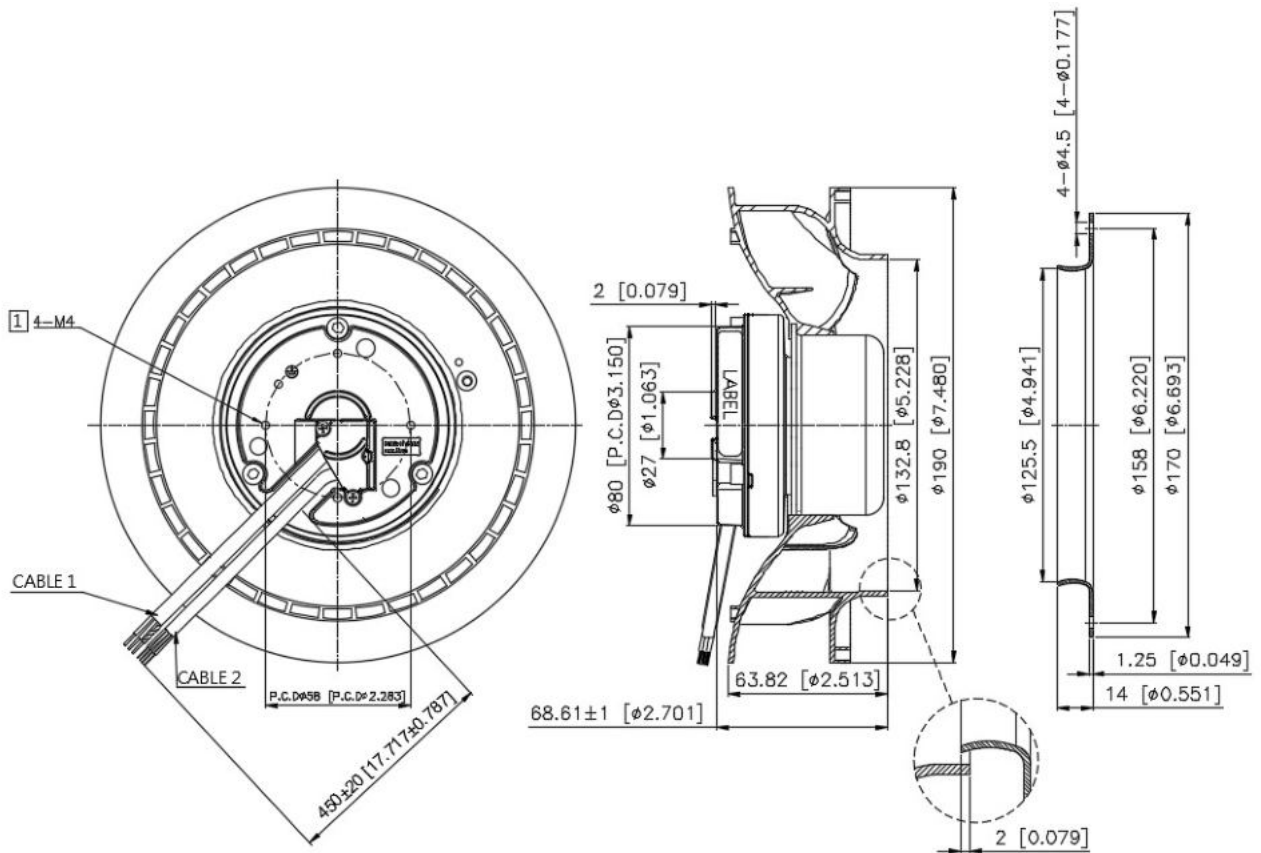
- Input Voltage: Nominal Voltage
- Temperature : Room Temperature
- Humidity : 65%RH
- Measured with inlet cone.
- Noise (Lp) is measured at a distance of one meter from the inlet side
- Testing method is compliance with ISO 3745.

Dimension drawing

Label :



Fan :

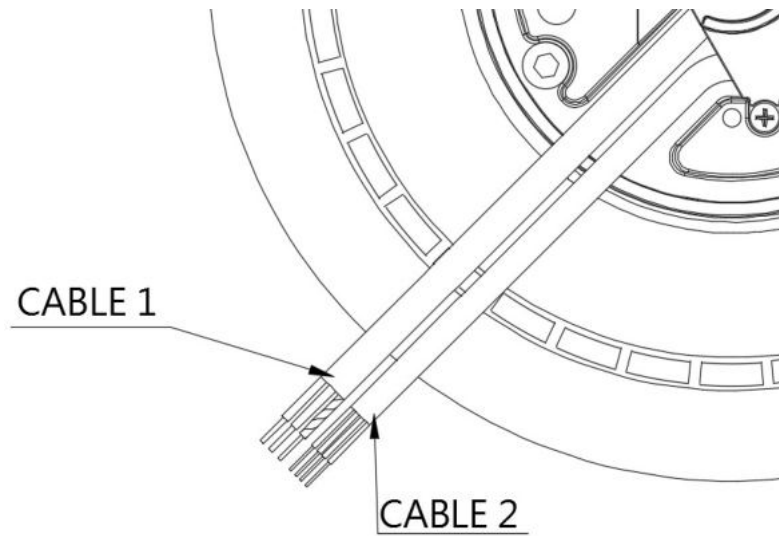


Note :

1. Depth of screw max. 5mm.

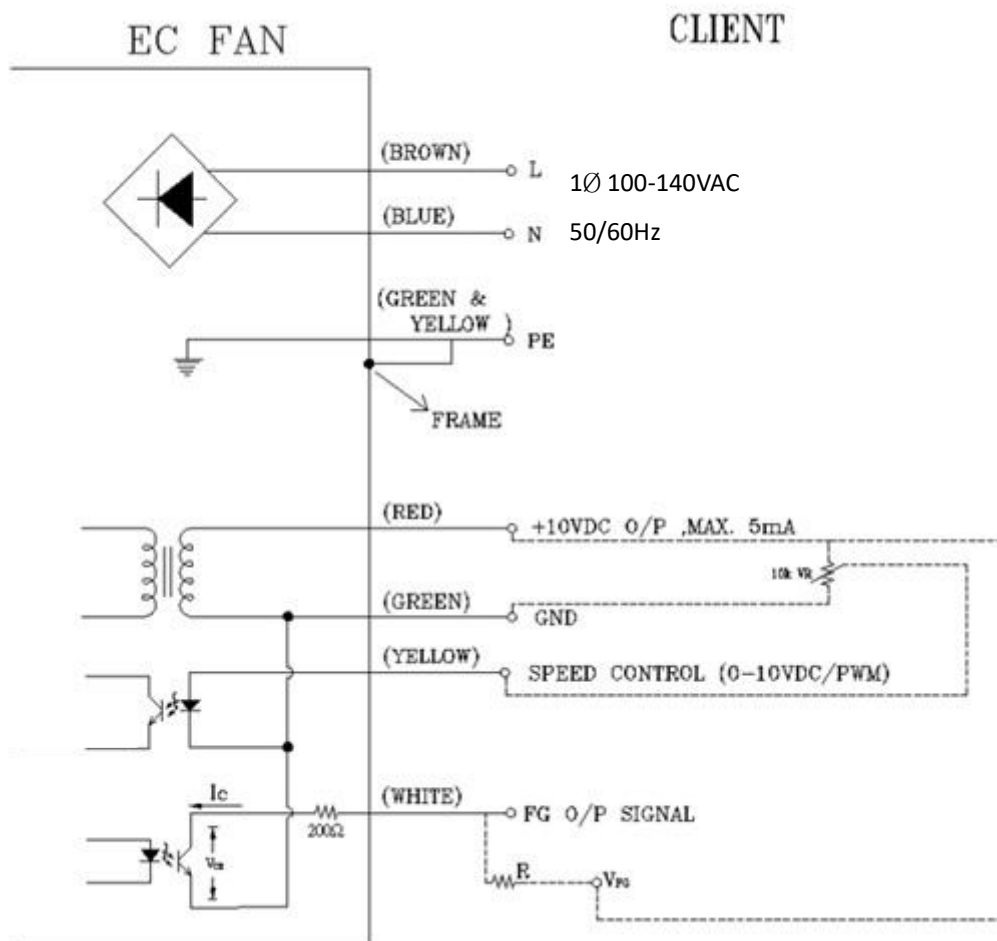
UNIT : mm[INCH]

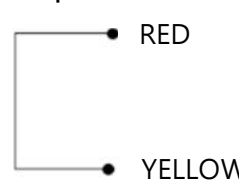
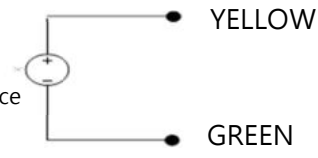

Definition of terminal block

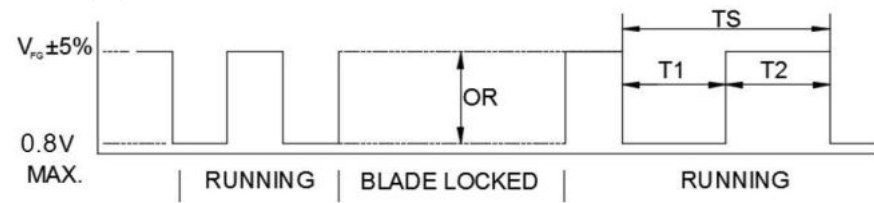


Cable	Wire Type	Color	Functions
1	UL2517 18#AWG	Brown	Line/ AC main
		Blue	Neutral/AC main
		Green / Yellow	Protective Earth
2	UL2464 24#AWG	Green	Ground
		Red	+10V output
		White	F00
		Yellow	0-10VDC / PWM

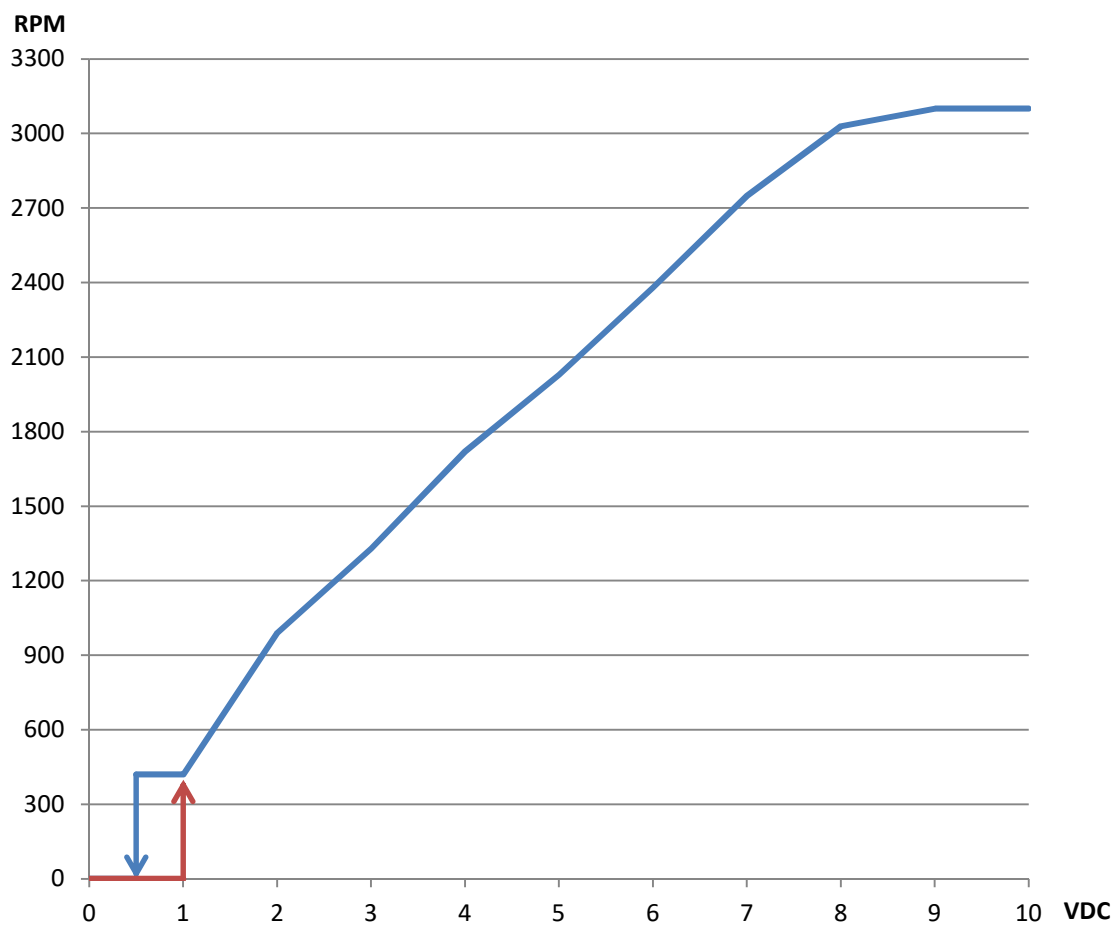
Lead wire connection:



Speed setting	
<p>Full Speed</p> 	<p>Short RED & YELLOW Fan will run full speed.</p>
<p>Voltage Control</p> 	<p>Use voltage source support 0~10VDC voltage DC+ : connect to YELLOW DC - : connect to GREEN -Voltage higher than 1.0 VDC, fan start up. -Voltage lower than 0.5 VDC , fan stop</p>
<p>PWM Control</p> 	<p>PWM duty control PWM amplitude is 10VDC(+/-5%) Frequency Range is 100Hz ~ 100kHz -PWM duty higher than 10%, fan start up ° -PWM duty lower than 5%, fan stop °</p>

Signal function													
<p>Voltage/PWM control</p>	<p>The speed comparison will control level.</p> <table border="1"> <thead> <tr> <th>Voltage (V)</th> <th>PWM(%)</th> <th>Speed (RPM) (REF)</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>1</td> <td>1</td> <td>420 ± 50RPM</td> </tr> <tr> <td>10</td> <td>99</td> <td>3100⁽¹⁾ ± 5%</td> </tr> </tbody> </table> <p>(1) Depending on power consumption conditions, speed might be different.</p>	Voltage (V)	PWM(%)	Speed (RPM) (REF)	0	0	0	1	1	420 ± 50RPM	10	99	3100 ⁽¹⁾ ± 5%
Voltage (V)	PWM(%)	Speed (RPM) (REF)											
0	0	0											
1	1	420 ± 50RPM											
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<p>FG</p>	<p>$V_{CE(sat)} = 0.8V \text{ MAX.}$ $V_{FG} = 30.0V \text{ MAX.}$ $I_C = 5mA \text{ MAX.}$ $R \geq V_{FG} / I_C$</p> <p>Frequency generator waveform</p>  <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> <p>N=R.P.M 1 PULSE PER REVOLUTION TS=60/N(SEC) T1=T2=1/2 TS</p> </div>												

Control Voltage VS. RPM Curve



Voltage (VDC), PWM duty (%) table

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	%

Note: If the fan is used on heavy load, the speed will be limited by power consumption.

Protection Standard

ITEM	Standard
Rain	IEC 60529 IPX4
Dust/sand	IEC 60529 IP5X
Gas corrosion	GR-63-CORE
Salt mist	IEC 60068-2-11

FAN MATERIAL:

- ① Blades: Plastic (PA6+30%GF)
- ② Rotor: Steel
- ③ Pillow: Polyester (BMC)
- ④ Bottom Cover: Die-cast aluminum

