



## Specification For Approval

Customer : \_\_\_\_\_  
Description : \_\_\_\_\_ EC FAN \_\_\_\_\_  
Customer Part No. : \_\_\_\_\_ Rev : \_\_\_\_\_  
Delta Model No. : \_\_\_\_\_ GTM031FUC20R \_\_\_\_\_ Rev : 00  
Safety Model No. : \_\_\_\_\_ GTB031FUC20 \_\_\_\_\_  
Sample Issue No. : \_\_\_\_\_  
Sample Issue Date : \_\_\_\_\_ 03/08/2017 \_\_\_\_\_

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

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

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

## Electronically Commutated (EC) Fan

### Centrifugal Fan

400 x 400 x 244.9 mm



GTM031FUC20R Delta Datasheet  
sales@fansco.com www.fansco.com



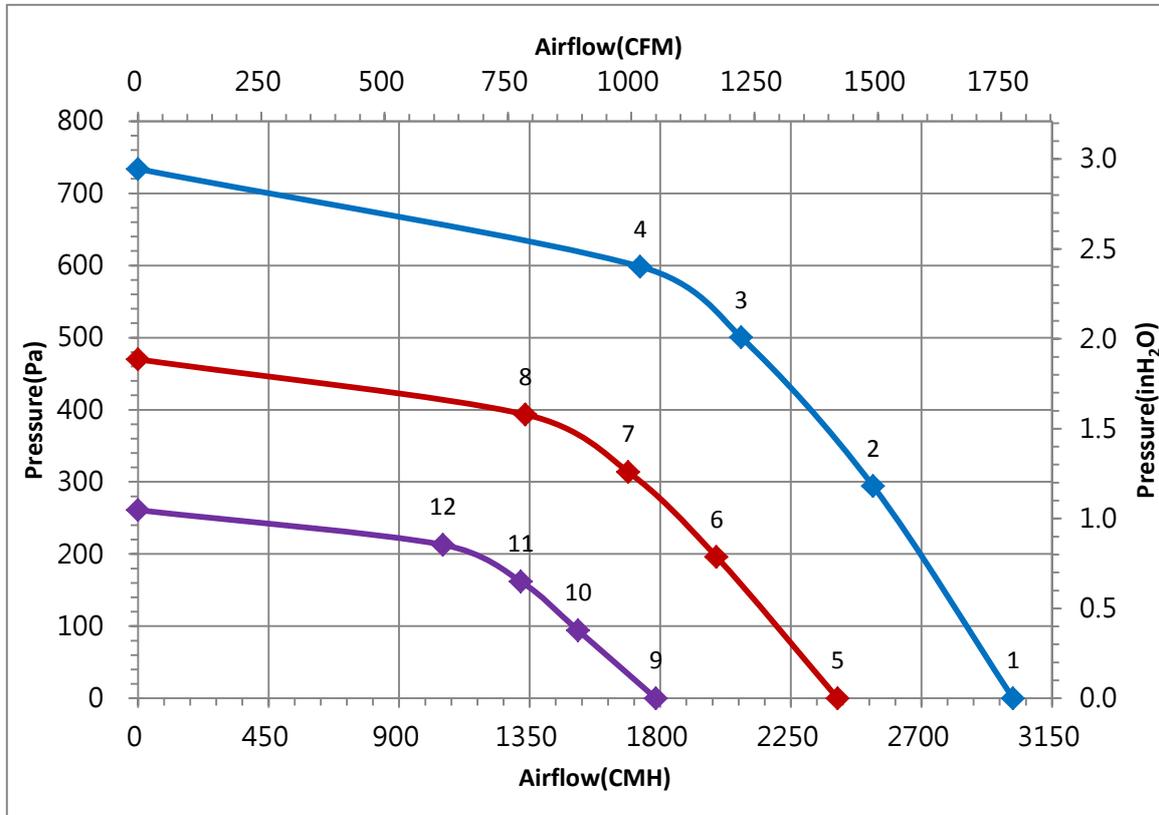
## Technical features

Input Side	
Nominal Voltage	1~ 230Vac 50/60Hz
Input Source	1~ 200Vac - 277Vac
Power @ Free air	385 W
Power @ Max. load	530 W
Output Side	
Speed (RPM)	2500
Qmax. (CMH / CFM)	3014 / 1774
Pmax. (Pa / inAq)	734 / 2.95
Noise (dB-A) @ Qmax.	74.5
Functions	
Passive power factor correction	
Control input 0~10V <sub>DC</sub> / PWM pattern.	
Output +10V <sub>DC</sub> (±10%), max. 10mA.	
RS485 control bus	
Alarm relay, Locked rotor protection, Soft start.	
Voltage / Current monitoring.	

Physical	
Rotation Direction	CW, Seen on rotor
Material (Impeller / Frame)	Aluminum sheet / Die-cast aluminum
Bearing system	Ball bearings
Weight (kg)	11
Electrical leads	Lead wire
Environmental	
Operating temperature range	-25 ~ +60 °C
Storage temperature range	-40 ~ +70 °C
Safety	
Safety	UL , cUL , TUV
IP Level	IP54
EMC	EN61000-6-1/3 , EN61000-3-2/3
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 &amp; Q curves



## Measure data:

	P [Pa]	Q [CMH]	N [R.P.M.]	P1 [W]	I [A]	Lp [dB(A)]
1	0	3014	2500	385	2.39	74.5
2	294	2532	2503	461	2.86	
3	500	2078	2496	510	3.17	
4	598	1730	2500	512	3.18	
5	0	2418	2000	195	1.21	69.1
6	196	1993	1998	238	1.48	
7	314	1688	2000	260	1.61	
8	393	1335	1998	259	1.61	
9	0	1784	1500	88	0.55	66.6
10	94	1516	1497	103	0.64	
11	162	1319	1497	113	0.70	
12	213	1050	1494	114	0.71	

## Test Condition :

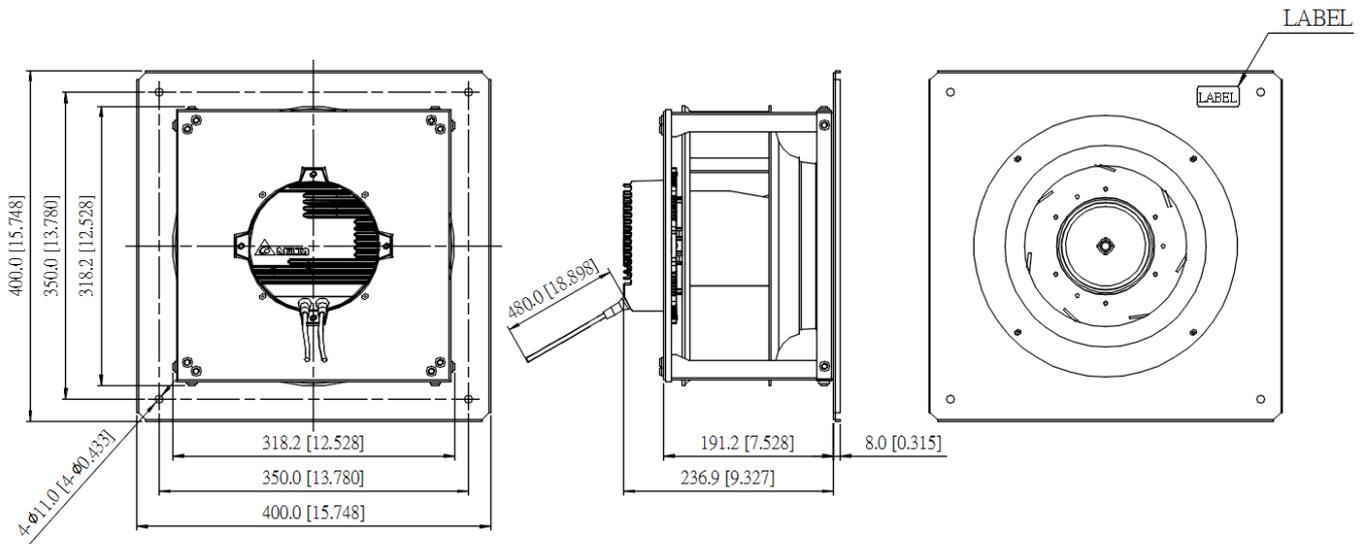
- Input Voltage: Nominal Voltage
- Temperature : Room Temperature
- Humidity : 65%RH
- Measured with inlet cone.
- Noise (Lp) is measured at a distance of one meter from the inlet side.

Dimension drawing

Label :

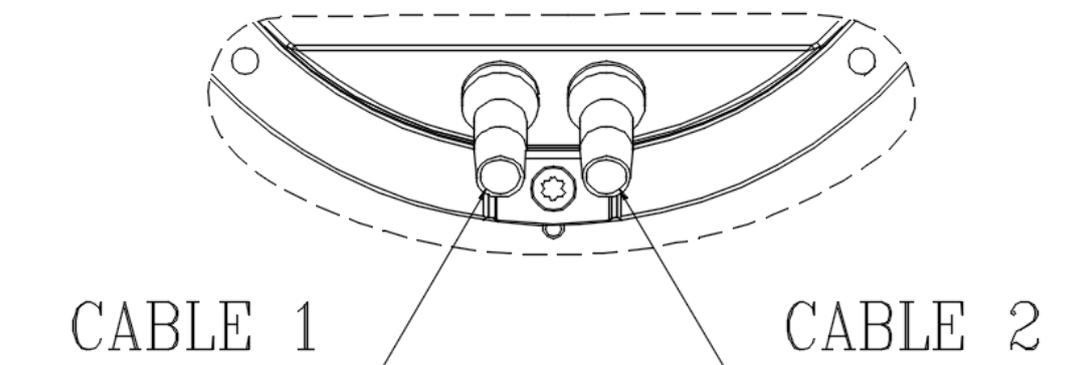


Fan :



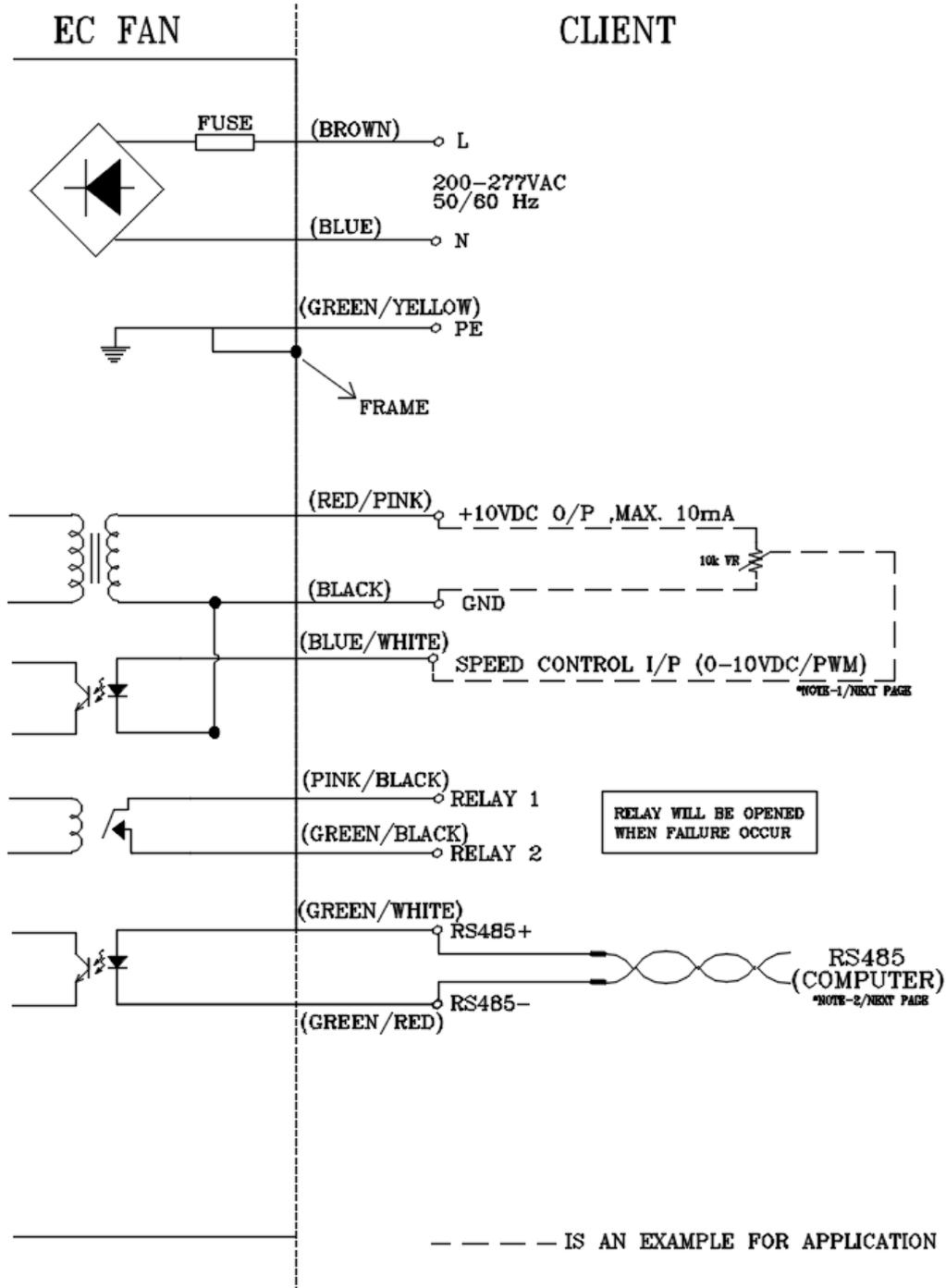
UNIT : mm [INCH]

## Definition of cable



Cable	Wire type	Text	Functions
1	UL 2464 18AWG 3C	Brown	L
		Blue	N
		Green / Yellow	Earth
2	UL 2464 24AWG 7C	Red / Pink	+10V
		Blue / White	PWM
		Black	GND
		Green / Red	RS485-
		Green / White	RS485+
		Pink / Black	Relay 1
		Green / Black	Relay 2

Lead wire connection:

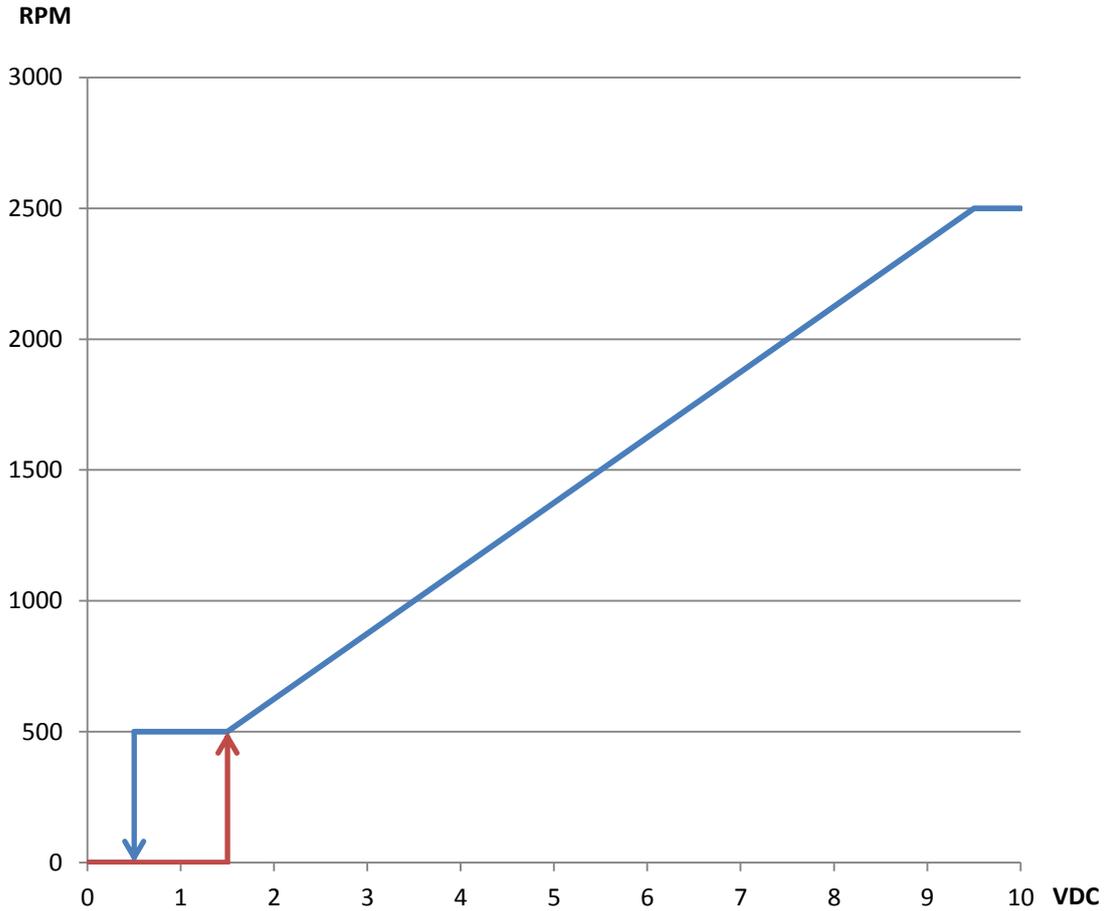


Speed setting	
<p><b>Full Speed</b></p> <p>• RED/PINK</p> <p>• BLUE/WHITE</p>	<p><b>Short RED/PINK &amp; BLUE/WHITE</b></p> <p>Fan will run full speed.</p>
<p><b>Voltage Control</b></p> <p>0-10V DC Source</p> <p>• BLUE/WHITE</p> <p>• BLACK</p>	<p><b>Use voltage source support 0~10VDC voltage</b></p> <p>DC+ : connector BLUE/WHITE</p> <p>DC - : connector BLACK</p> <p>-Voltage higher than 1.5VDC, fan start up.</p> <p>-Voltage lower than 0.5VDC , fan stop</p>
<p><b>PWM Control</b></p> <p>PWM Generator</p> <p>• BLUE/WHITE</p> <p>• BLACK</p>	<p><b>PWM duty control</b></p> <p>PWM amplitude is 10VDC(+/-5%)</p> <p>Frequency Range is 100Hz ~ 100kHz</p> <p>-PWM duty higher than 15%, fan start up °</p> <p>-PWM duty lower than 5%, fan stop °</p>

Signal function																
<b>RS485 control function</b>	<p><b>RS485 control function</b></p> <p>-Select the control mode of speed, fixed speed or fixed PWM duty</p> <p>-Speed and power consumption feedback.</p> <p>-Allow multiple FANs control and status patrol.</p>															
<b>Voltage control</b>	<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>1.5</td> <td>15</td> <td>500 ± 50 RPM</td> </tr> <tr> <td>6.0</td> <td>60</td> <td>1680 ± 8%</td> </tr> <tr> <td>9.5</td> <td>95</td> <td>2500 ± 5%</td> </tr> </tbody> </table>	Voltage (V)	PWM (%)	Speed (RPM) (REF)	0	0	0	1.5	15	500 ± 50 RPM	6.0	60	1680 ± 8%	9.5	95	2500 ± 5%
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<b>Alarm state</b>	<b>Open with Failure (Relay1/Relay2)</b>															



Control Voltage VS. RPM Curve



Voltage(VDC) , PWM duty (%)

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	%