



## Specification For Approval

Customer : \_\_\_\_\_  
Description : \_\_\_\_\_ EC FAN \_\_\_\_\_  
Customer Part No. : \_\_\_\_\_ N/A \_\_\_\_\_ Rev : \_\_\_\_\_  
Delta Model No. : \_\_\_\_\_ GTW040FUC15S-M001 \_\_\_\_\_ Rev : 00  
Safety Model No. : \_\_\_\_\_ GTW040FUC15S \_\_\_\_\_  
Sample Issue No. : \_\_\_\_\_  
Sample Issue Date : \_\_\_\_\_ 12/11 '18 \_\_\_\_\_

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

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

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

Delta Electronics, Inc.

No.252, Shanying Rd., GuishanDist., TEL : 886-(0)3-3591968

Taoyuan City 333, Taiwan (R.O.C.) FAX : 886-(0)3-3591991

\*\*\* SAMPLE HISTORY \*\*\*

CUSTOMER : 篠原電機

CUSTOMER P/N : N/A

DELTA MODEL : GTW040FUC15S-M002

REV	DESCRIPTION	DRAWN	CHECKED		APPROVED	ISSUE DATE
			ME	EE		
00	ISSUE SPEC	邱奕清	邱奕清 12/11'18	蘇錦平 12/11'18	顏承偉 12/11'18	12/11'18

## Electronically Commutated (EC) Fan

Axial Fan

φ 528 x 154 mm



Delta Electronics, Inc.  
 No.252, Shangying Road, Guishan  
 Industrial Zone, Taoyuan City,  
 33341, Taiwan  
 TEL:+886-3-3591968  
 FAX:+886-3-3591991  
[www.deltaww.com](http://www.deltaww.com)

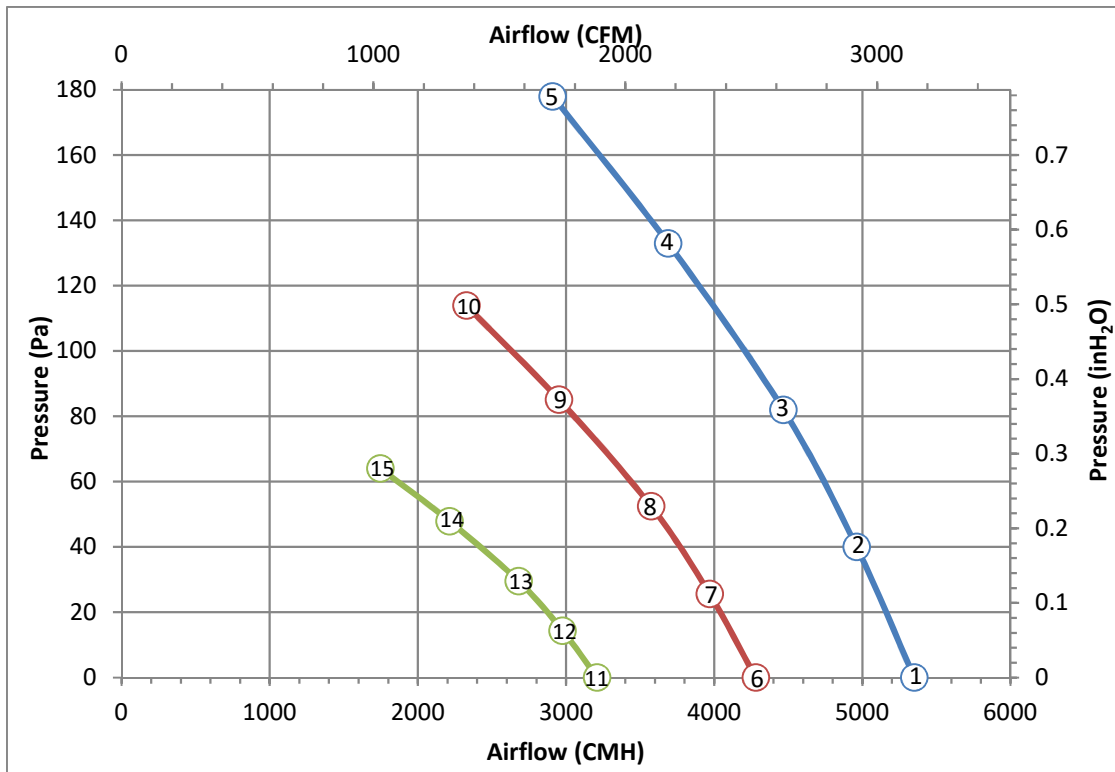
### Technical features

Input Side	
Nominal voltage	1~ 230Vac 50/60Hz
Input source	1~ 200Vac - 277Vac
Power @ free air	330 W
Power @ max. load	420 W
Output Side	
Speed (RPM)	1650
Qmax. (CMH / CFM)	5350 / 3147
Pmax. (Pa / inAq)	198 / 0.8
Noise (dB-A) @ Qmax	72
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 (MODBUS RTU / 8N1)	
Alarm relay, Locked rotor protection, Soft start.	
Voltage / Current monitoring.	

Physical	
Rotation direction	CW, seen on rotor
Material (impeller /frame )	Plastic / steel
Bearing system	Ball bearings
Weight (kg)	9.7
Electrical leads	cable
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 , EN61000-6-3 , EN61000-3-2/3
Protection class	I
Insulation class	B
Leakage current	<= 3.5 mA
Motor protection	Over temperature protected
Life expectance	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	0.0	5350	1650	330	2.05	72
2	40	4961	1650	336	2.09	72
3	82	4467	1650	348	2.16	71
4	133	3689	1650	369	2.29	69
5	178	2910	1650	389	2.42	72
6	0.0	4280	1320	169	1.10	67
7	26	3969	1320	172	1.15	67
8	53	3574	1320	178	1.18	65
9	85	2951	1320	189	1.20	63
10	114	2328	1320	199	1.28	66
11	0	3210	990	71	0.47	61
12	14	2977	990	73	0.48	61
13	30	2680	990	75	0.49	60
14	48	2213	990	80	0.51	56
15	64	1746	990	84	0.54	60

Test condition:

- Input voltage: nominal voltage
- Temperature : room temperature
- Humidity : 65%RH
- Measured with standard fanguard and wallring.
- Noise is measured at a distance of one meter from the fan intake with a sound level meter in anechoic chamber.

ErP Directive:

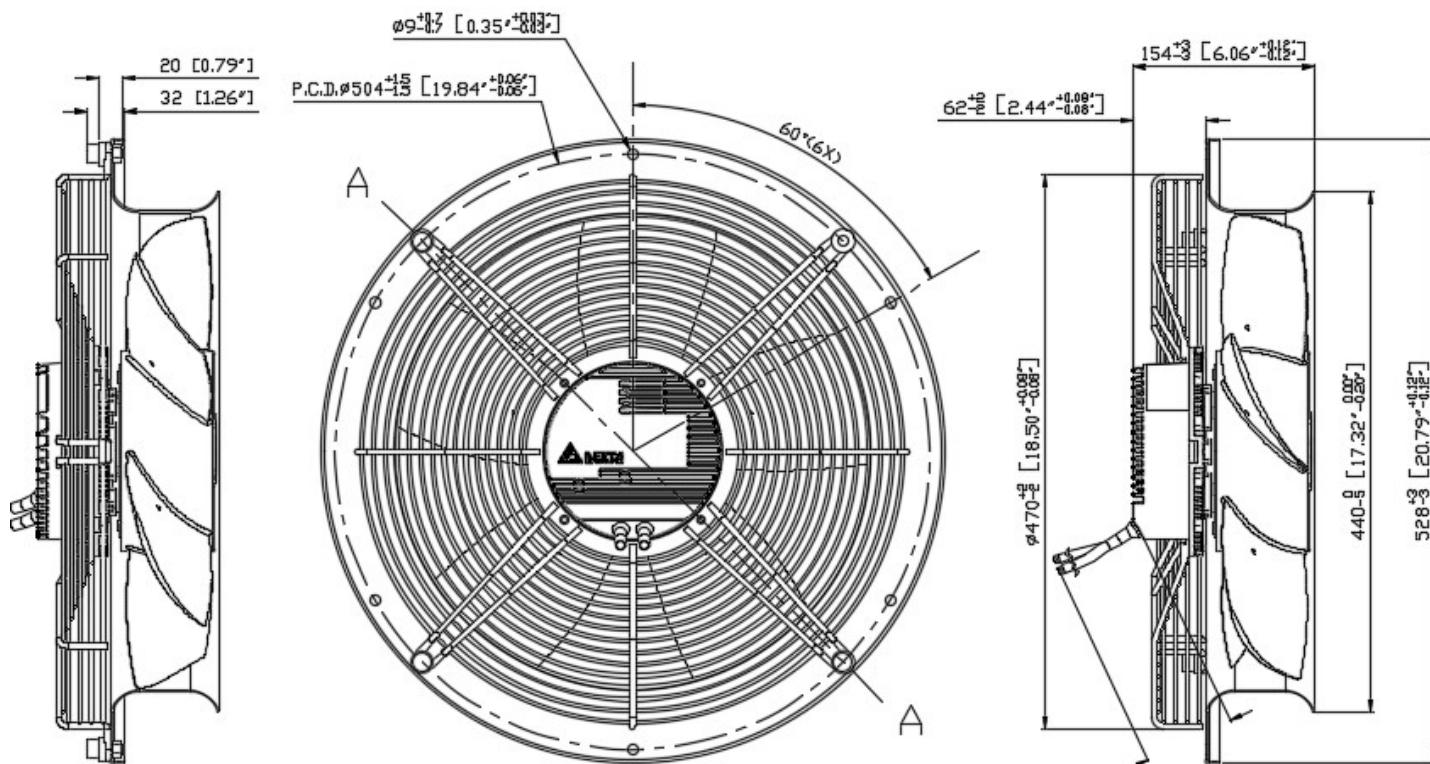
	Actual	2013	2015
Over all Eff (%)	40.6	27	31
Eff Grade N	49.6	36	40
Power (kW)	0.369		
Air flow (CMH)	3689		
Pressure (Pa)	133		
Speed (RPM)	1652		

Dimension drawing

Label :



Fan :



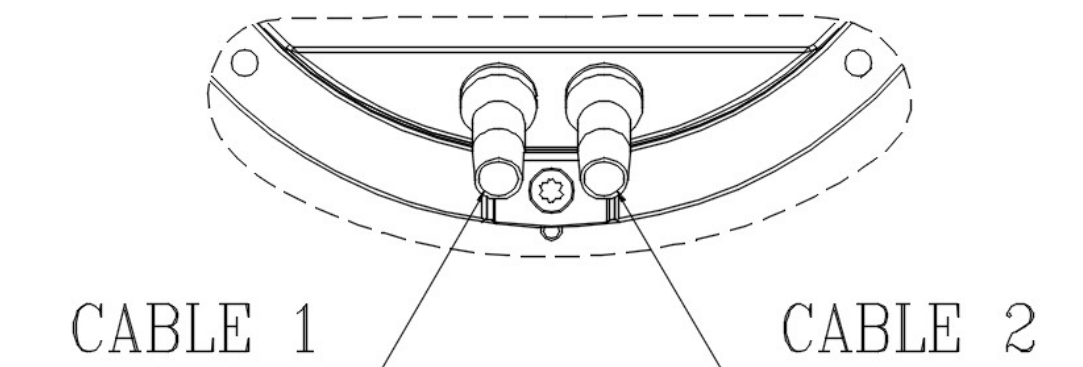
SECTION A-A

1500<sup>±0</sup>  
[59.06<sup>±0</sup> / 1.97]

➔ AIR FLOW("A")

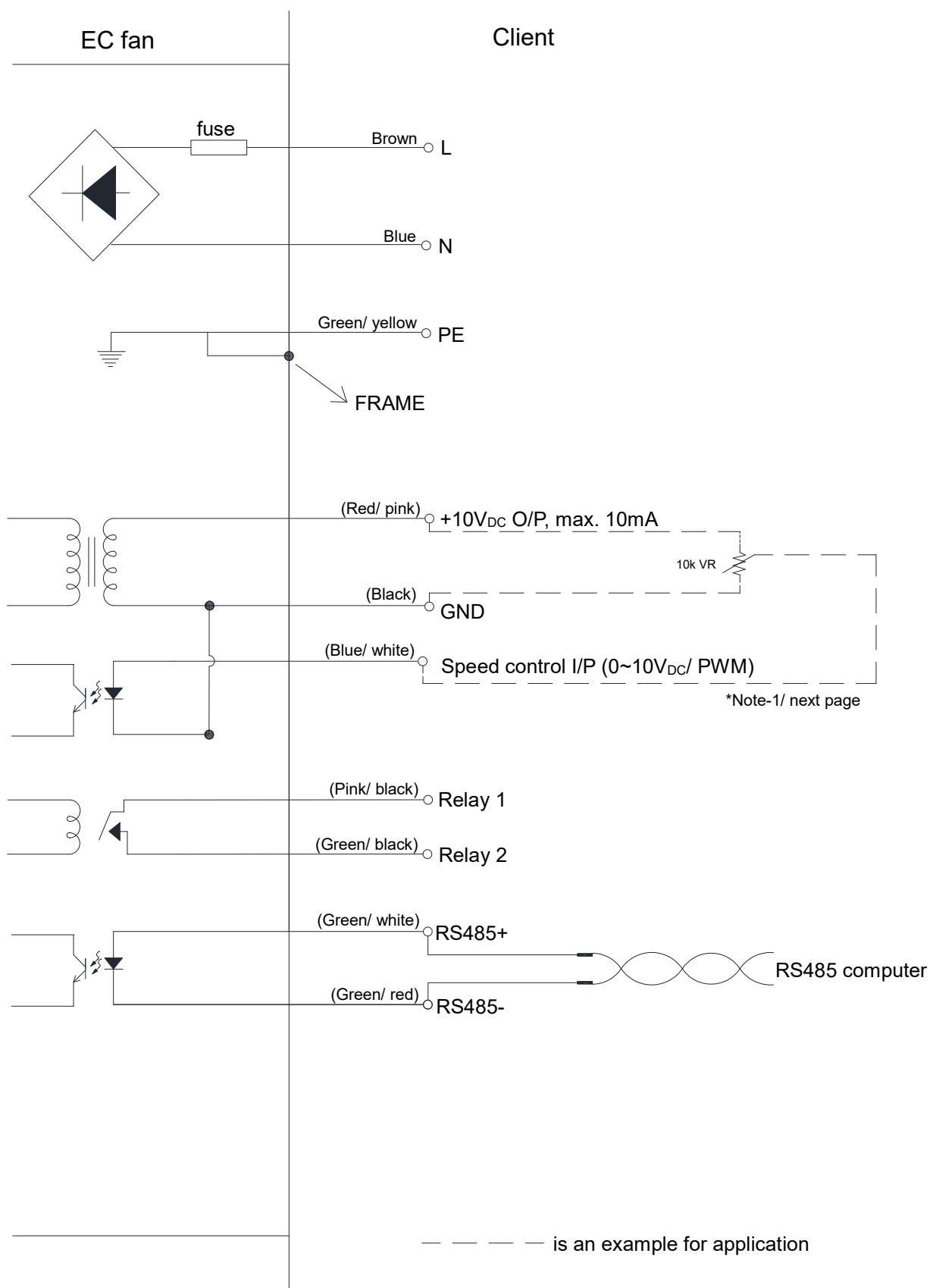
UNIT: mm [inch]

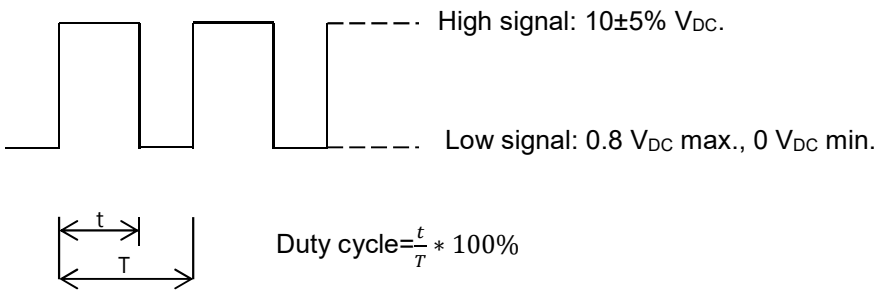
Definition of cable



Cable	Color	Functions
Cable 1 Power UL2464 18 AWG	Brown	L
	Blue	N
	Green/ yellow	Earth
Cable 2 Signal UL2464 24 AWG	Red/ pink	+10V <sub>DC</sub>
	Blue/ white	PWM
	Black	GND
	Green/ red	RS485 -
	Green/ white	RS485 +
	Pink/ black	Relay 1
	Green/ black	Relay 2

Lead wire connection:

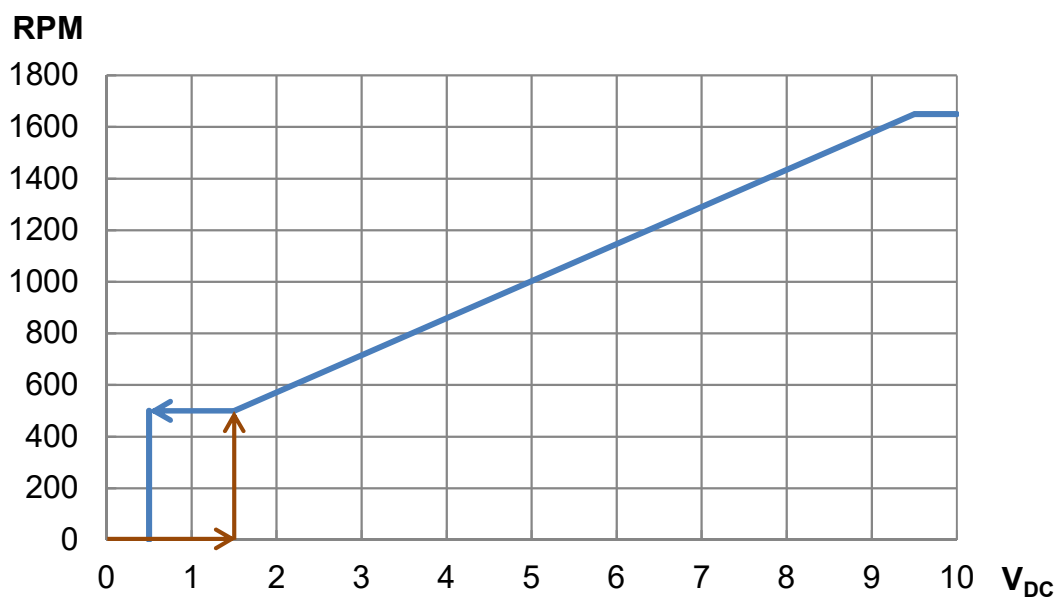


Signal function	
Voltage control (*note-1)	<ul style="list-style-type: none"> <li>-The voltage range shall be 0~10 V<sub>DC</sub></li> <li>-The fan will operate at max. speed, when voltage is 10 V<sub>DC</sub></li> <li>-The fan will be stop, When voltage is lower than 0.5 V<sub>DC</sub></li> </ul>
PWM control (*note-1)	<p>Signal voltage range: 10.0 V<sub>DC</sub></p>  <p style="text-align: right;">High signal: 10±5% V<sub>DC</sub>.</p> <p style="text-align: right;">Low signal: 0.8 V<sub>DC</sub> max., 0 V<sub>DC</sub> min.</p> <p style="text-align: center;"> <math display="block">\text{Duty cycle} = \frac{t}{T} * 100\%</math> </p>
RS485 control function	<ul style="list-style-type: none"> <li>-Select the control mode of speed, fixed speed or fixed PWM duty</li> <li>-Speed and power consumption feedback.</li> <li>-Allow multiple FANs control and status patrol.</li> </ul> <p>Cable: A MODBUS over Serial Line Cable must be shielded. At one end of each cable its shield must be connected to protective ground.</p>
Relay function	Relay will be open, when fault occur



## Control Voltage VS. RPM Curve

Voltage(V <sub>DC</sub> )	PWM Duty(%)	Speed R.P.M.(ref.)	Power(W)
0.0	0	0	<5
9.5	95	1650	420



**Voltage(V<sub>DC</sub>) ,and PWM duty(%)**

<b>Voltage</b>	0	0.5	1	1.5	2	3	4	5	6	7	8	9.5	10	<b>V<sub>DC</sub></b>
<b>PWM duty</b>	0	5	1	15	20	30	40	50	60	70	80	95	100	<b>%</b>