



Specification For Approval

Customer : _____
Description : _____ EC FAN _____
Customer Part No. : _____ Rev : _____
Delta Model No. : _____ GTM050NUT34R _____ Rev : X01
Safety Model No. : _____
Sample Issue No. : _____
Sample Issue Date : _____ 9/9/2016 _____

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

TEL : +886-3-359-1968

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*** SAMPLE HISTORY ***

CUSTOMER :

CUSTOMER P/N :

DELTA MODEL : GTM050NUT34R

REV	DESCRIPTION	DRAWN	CHECKED		APPROVED	ISSUE DATE
			ME	EE		
X00	ISSUE SPEC.	鍾明翰 4/26'16	鍾明翰 4/26'16	郭子鳴 4/26'16	顏承偉 4/26'16	4/26'16
X01	MODIFY SPEC.	鍾明翰 9/9'16	鍾明翰 9/9'16	郭子鳴 9/9'16	顏承偉 9/9'16	9/9'16

Electronically Commutated (EC) Fan

Centrifugal Fan

630 x 630 x 412.5 mm



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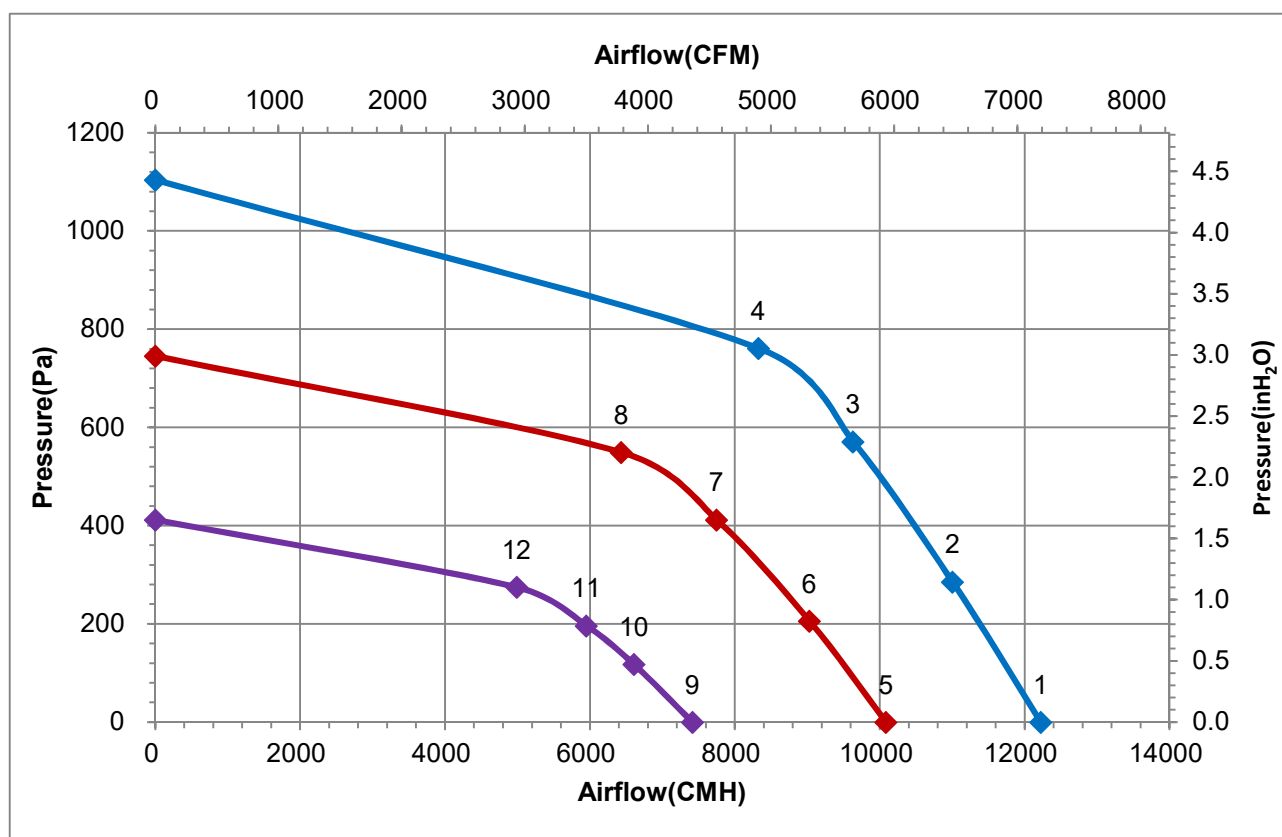
Technical features

Input Side	
Nominal Voltage	3~ 400Vac 50/60Hz
Input Source	3~ 380Vac - 480Vac
Power @ Free air	2430 W
Power @ Max. load	3100 W
Output Side	
Speed (RPM)	1820
Qmax. (CMH / CFM)	12221 / 7193
Pmax. (Pa / inAq)	1104 / 4.43
Noise (dB-A) @ Qmax.	86.4
Functions	
Active power factor correction	
Control input 0-10VDC / PWM / 4-20mA.	
Output +10VDC (±10%), max. 10mA.	
Control voltage output: 0-10VDC.	
RS485 control bus	
Alarm relay, Locked rotor protection, Soft start.	
Speed telling, Frequency generator signal.	
Voltage / Current monitoring.	

Physical	
Rotation Direction	CW, Seen on rotor
Material (Impeller / Frame)	Aluminum sheet / Die-cast aluminum
Bearing system	Ball bearings
Weight (kg)	47
Electrical leads	Via terminal block
Environmental	
Operating temperature range	-25 ~ +60 °C
Storage temperature range	-40 ~ +70 °C
Safety	
Safety	UL , cUL , TUV (in progress)
IP Level	IP54
EMC	EN61000-6-2/3 , EN61000-3-2/3 (in progress)
Protection class	I
Insulation class	F
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	12221	1820	2216	3.31	86.4
2	286	11005	1820	2650	3.96	
3	571	9631	1820	2983	4.41	
4	761	8324	1820	3100	4.59	
5	0	10085	1500	1296	2.18	81.2
6	206	9028	1500	1533	2.53	
7	412	7746	1500	1723	2.75	
8	549	6431	1500	1754	2.79	
9	0	7415	1100	570	1.00	73.2
10	118	6607	1100	666	1.18	
11	196	5950	1100	727	1.29	
12	275	4989	1100	752	1.33	

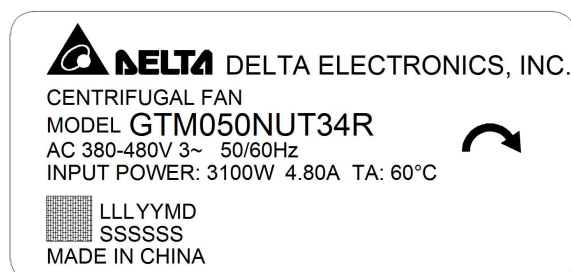
Test Condition :

- Input Voltage: Nominal Voltage
- Temperature : Room Temperature
- Humidity : 65%RH
- Measured with inlet cone.

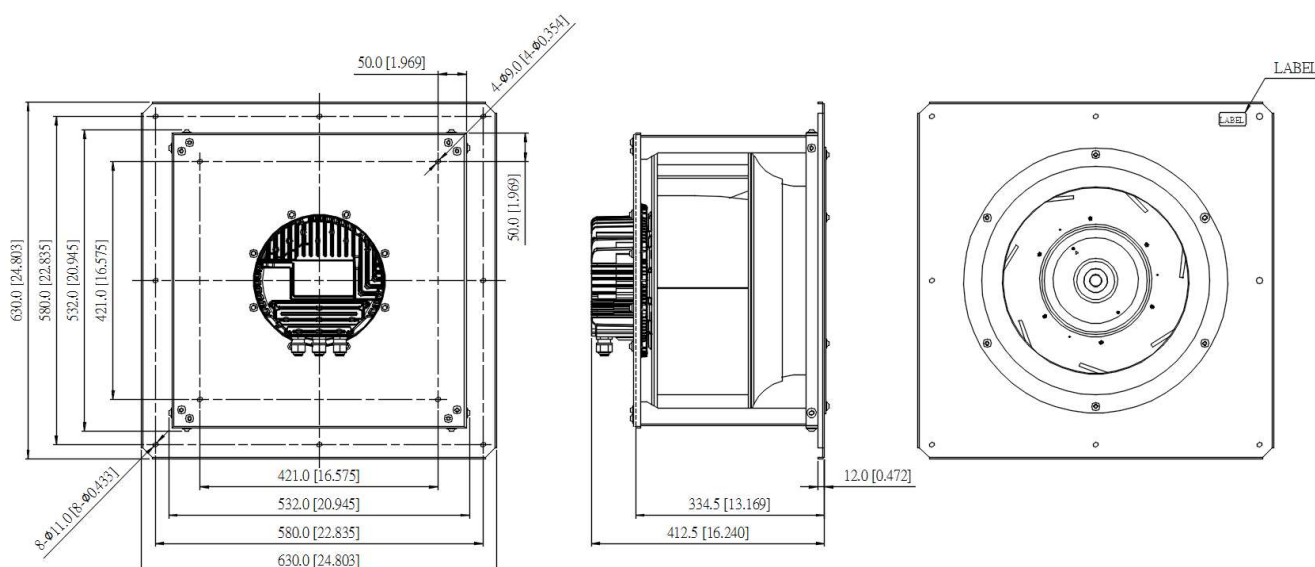
Noise (Lp) is measured at a distance of one meter from the inlet side.

Dimension drawing

Label :



Fan :

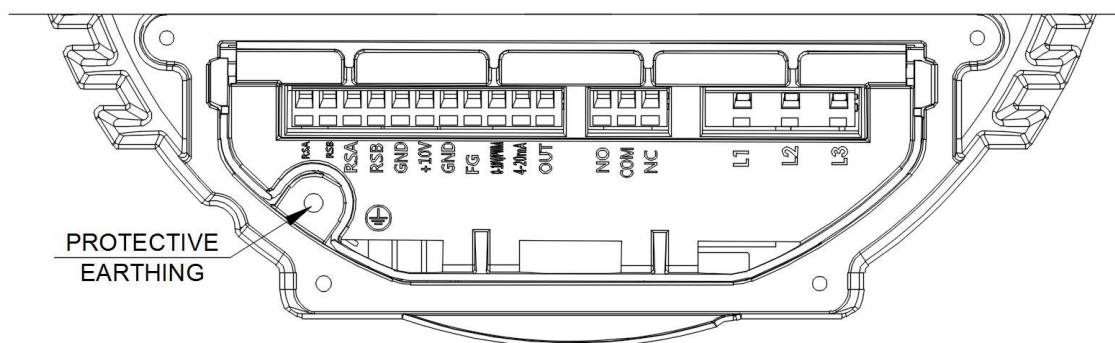


Note :

- 1 Cable diameter : $\phi 7.0 \sim \phi 12.7$ mm.
- 2 Open the cover and refer to definition of terminal block.

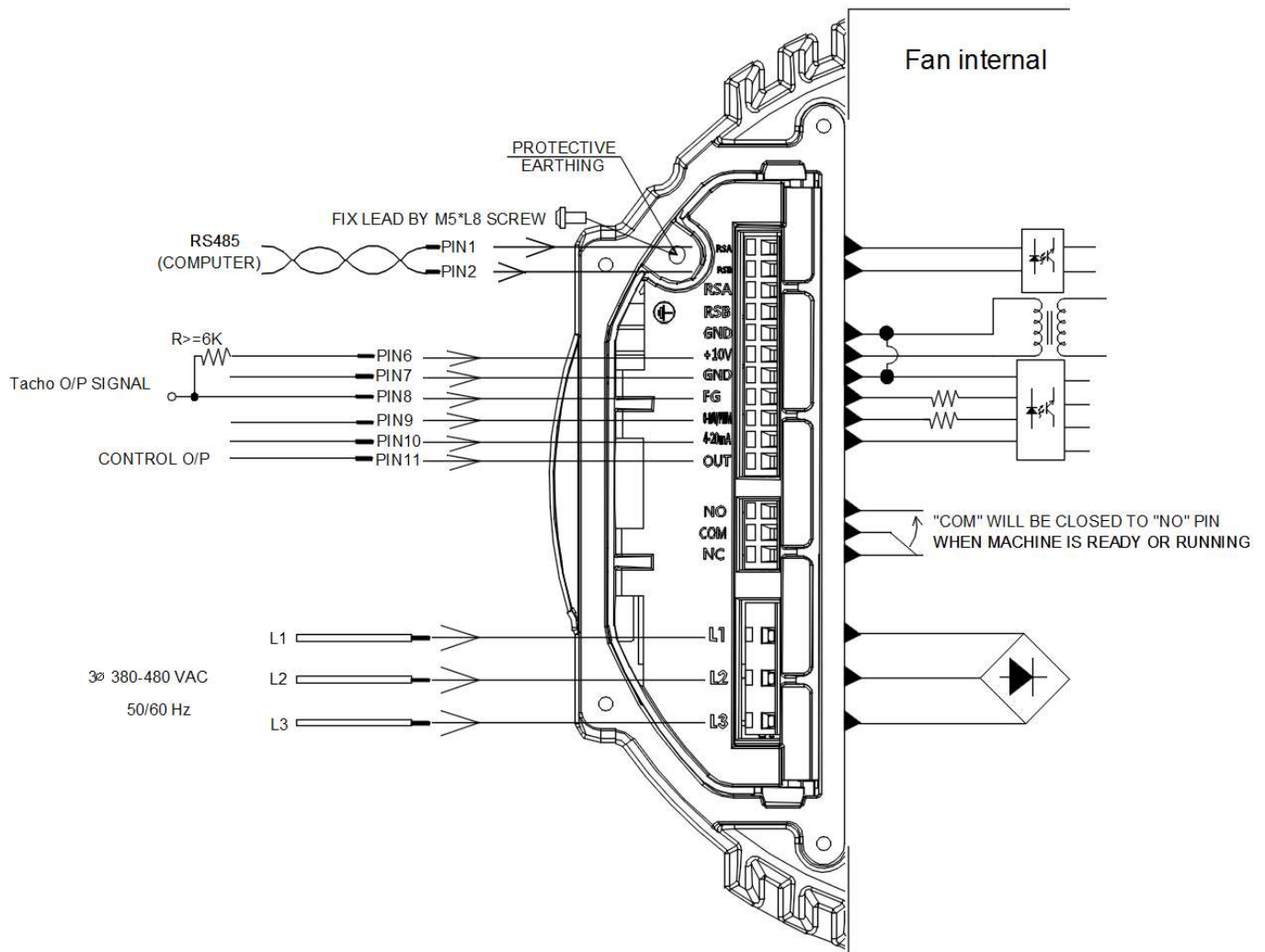
UNIT : mm[INCH]

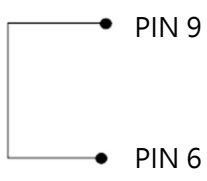
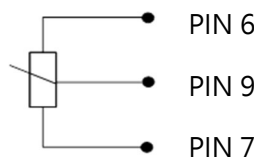
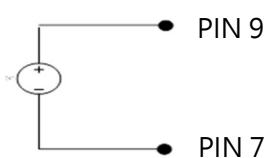
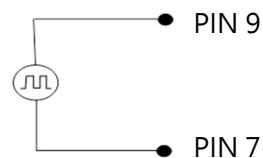
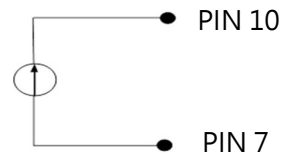
Definition of terminal block

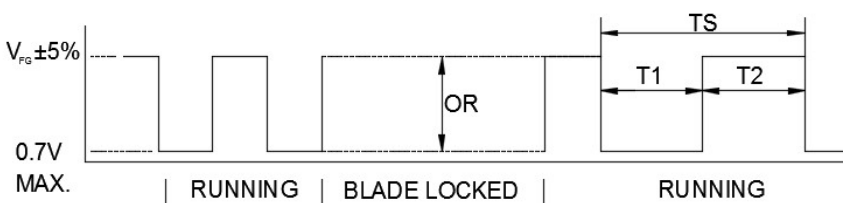


	Text	Functions
Power	L1	AC main (3~ 380-480VAC)
	L2	AC main (3~ 380-480VAC)
	L3	AC main (3~ 380-480VAC)
Status	NO	Alarm relay, open by failure
	COM	Alarm relay, common (2A/250VAC)
	NC	Alarm relay, close by failure
Signal	RSA	RS485-A
	RSB	RS485-B
	RSA	RS485-A
	RSB	RS485-B
	GND	Ground
	+10V	+10V output, MAX 10mA (For external potentiometer)
	GND	Ground
	FG	Frequency generator (FG) signal
	0-10V/PWM	Speed control, input 0-10VDC
	4-20mA	Speed control, input 4-20mA
	OUT	Control voltage output 0-10VDC (For external potentiometer)

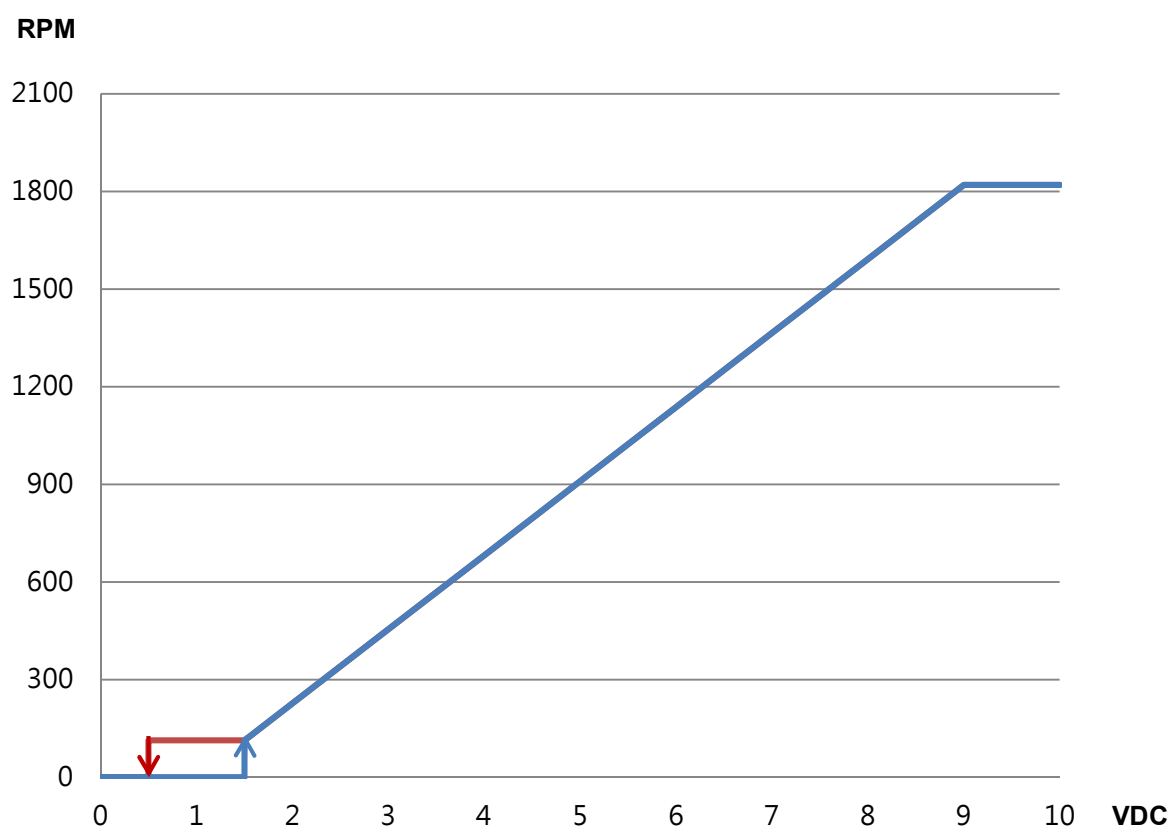
Lead wire connection:



Speed setting	
Full Speed 	Short PIN6 & PIN9 Fan will run full speed.
Voltage Control A 	Connector 1-10kΩ variable resistor Between +10VDC with GND and 0-10V/PWM Turn the variable resistor · can change the ' 0-10V/PWM ' voltage (0...10V) °
Voltage Control B 0-10V DC Source 	Use voltage source support 0~10VDC voltage DC+ : connector PIN9(+) DC - : connector PIN7(-)
PWM Control PWM Generator 	PWM duty control PWM amplitude is 10VDC(+ -5%) Frequency Range is 100Hz...100kHz -PWM duty higher than 15%, fan start up ° -PWM duty lower than 5%, fan stop °
Current Control 4-20mA Current Source 	4~20mA Current Control Open 0-10V/PWM PIN - 4.5 mA → Fan Stop - 6.0 mA → Fan Start up - 19.5 mA → Maximum Speed

Signal function											
RS485 control function	RS485 control function -Select the control mode of speed, fixed speed or fixed PWM duty -Speed and power consumption feedback. -Allow multiple FANs control and status patrol.										
Control O/P	The analog signal level is the derivative of current control level. <table border="1"> <thead> <tr> <th>Current (mA)</th><th>Control O/P (VDC) (REF)</th></tr> </thead> <tbody> <tr> <td>4.0</td><td>0</td></tr> <tr> <td>6.3</td><td>1.60</td></tr> <tr> <td>14.0</td><td>6.03</td></tr> <tr> <td>19.5</td><td>9.19</td></tr> </tbody> </table>	Current (mA)	Control O/P (VDC) (REF)	4.0	0	6.3	1.60	14.0	6.03	19.5	9.19
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NO COM NC	● Normal State -- NO and COM will ---CLOSE. -- NC and COM will ---OPEN. ● Alarm State -- NO and COM will ---OPEN. -- NC and COM will ---CLOSE.										
FG	$V_{CE(sat)} = 0.7V \text{ MAX.}$ $V_{FG} = 20.0V \text{ MAX.}$ $I_C = 5mA \text{ MAX.}$ $R \geq V_{FG} / I_C$ Frequency generator waveform  $V_{FG} \pm 5\%$ $0.7V \text{ MAX.}$ OR T_1 T_2 T_S RUNNING BLADE LOCKED RUNNING <table border="1"> <tr> <td>$N = \text{R.P.M}$</td> <td>1 PULSE PER REVOLUTION</td> </tr> <tr> <td>$T_S = 60/N(\text{SEC})$</td> <td>$T_1 = T_2 = 1/2 T_S$</td> </tr> </table>	$N = \text{R.P.M}$	1 PULSE PER REVOLUTION	$T_S = 60/N(\text{SEC})$	$T_1 = T_2 = 1/2 T_S$						
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Control Voltage VS. RPM Curve



Voltage(VDC) , PWM duty (%), 4~20mA 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	%
4~20 mA	4	5	5.6	6	7.2	8.8	10.4	12	13.6	15.2	16.8	19	20	mA