



Specification For Approval

Customer : _____
Description : _____ EC FAN _____
Customer Part No. : _____ Rev : _____
Delta Model No. : _____ GTB056PUT34R E1 _____ Rev : 02
Safety Model No. : _____ EMBP5E5FHL _____
Sample Issue No. : _____
Sample Issue Date : _____ 03/08/2023 _____

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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Electronically Commutated (EC) Fan

Centrifugal Fan

Ø 565 x 338.5 mm



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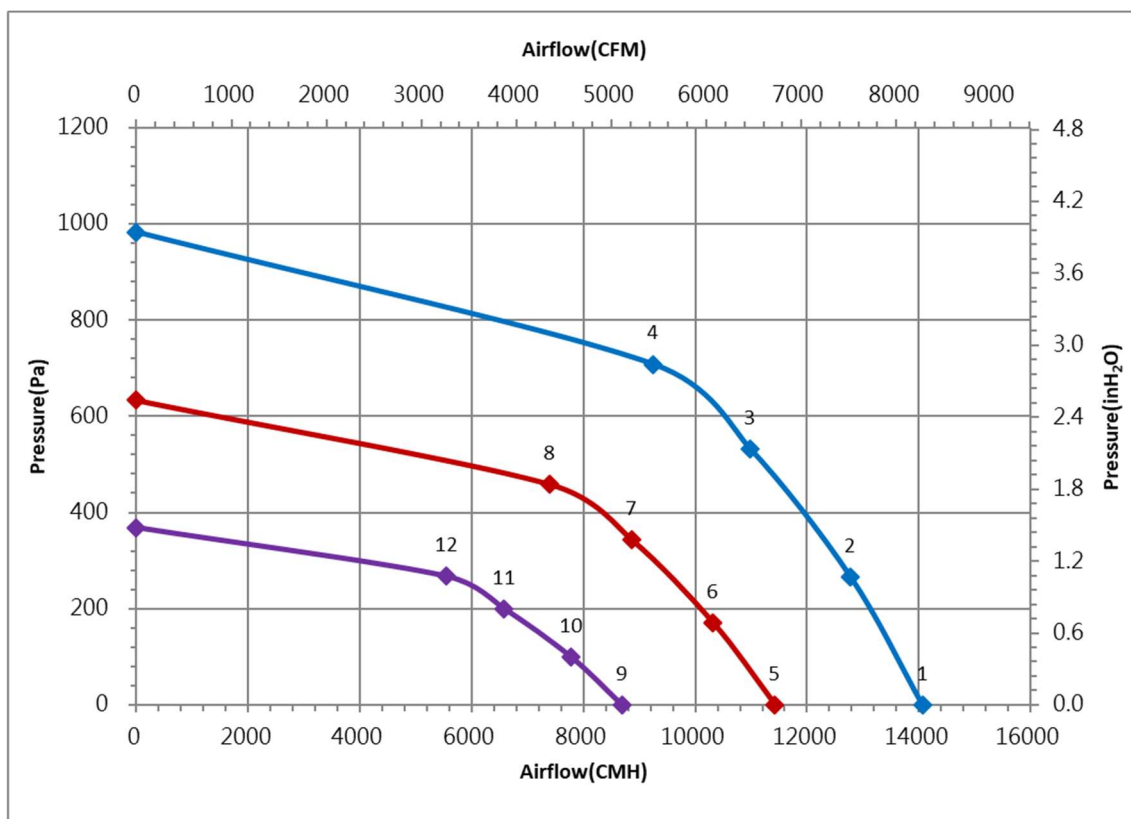
Technical features

Input Side	
Nominal Voltage	3~ 400V _{ac} 50/60Hz
Input Source	3~ 380V _{ac} - 480V _{ac}
Power @ Free air	2003 W
Power @ Max. load	3100 W
Output Side	
Speed (RPM)	1550
Qmax. (CMH / CFM)	14068 / 8275
Pmax. (Pa / inAq)	982 / 3.94
Noise (dB-A) @ Qmax.	85.5
Functions	
Passive power factor correction	
Control input 0-10V _{DC} / PWM	
Output +10V _{DC} (±10%), max. 10mA.	
RS485 control bus (MODBUS (V20) RTU / 8N1)	
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
Material (Bracket / Nozzle)	N/A / Sheet steel
Bearing system	Ball bearings
Weight (kg)	31
Electrical leads	Via terminal block
Environmental	
Operating temperature range	-25 ~ +60 °C
Storage temperature range	-40 ~ +70 °C
Safety	
Safety	UL , cUL , CE , UKCA
IP Level	IP54
EMC	EN61000-6-2 , EN61000-6-3
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	14068	1544	2003	3.51	85.5
2	267	12778	1545	2554	4.35	
3	533	10981	1560	3010	4.91	
4	708	9244	1544	3078	5.10	
5	0	11425	1244	1065	2.43	80.0
6	171	10312	1247	1345	2.64	
7	344	8857	1245	1587	2.92	
8	458	7401	1245	1617	3.02	
9	0	8684	946	498	1.49	72.5
10	99	7781	946	616	1.67	
11	200	6577	946	718	1.83	
12	268	5539	946	729	1.83	

Test Condition :

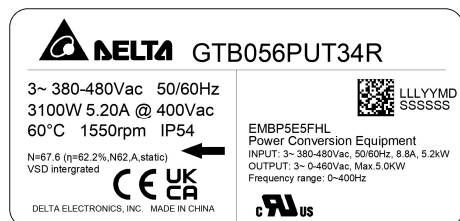
- Input Voltage : Nominal Voltage
- Temperature : Room Temperature
- Humidity : 65%RH
- Measured with inlet cone.
- Noise (Lp) is measured at a distance of one meter from the inlet side.

ErP Directive:

	Actual	2015
Over all Eff (%)	62.2	56.6
Eff Grade N	67.6	62.0
Power (kW)	3.1	
Air flow (CMH)	9244	
Pressure (Pa)	708	
Speed (RPM)	1544	

Dimension drawing

Label :



Fan :

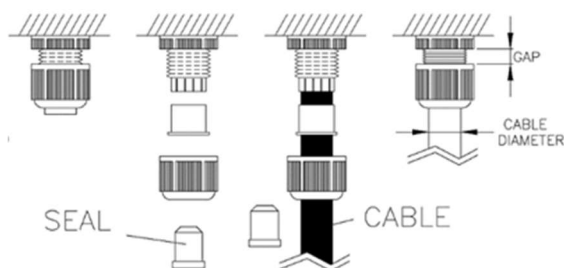
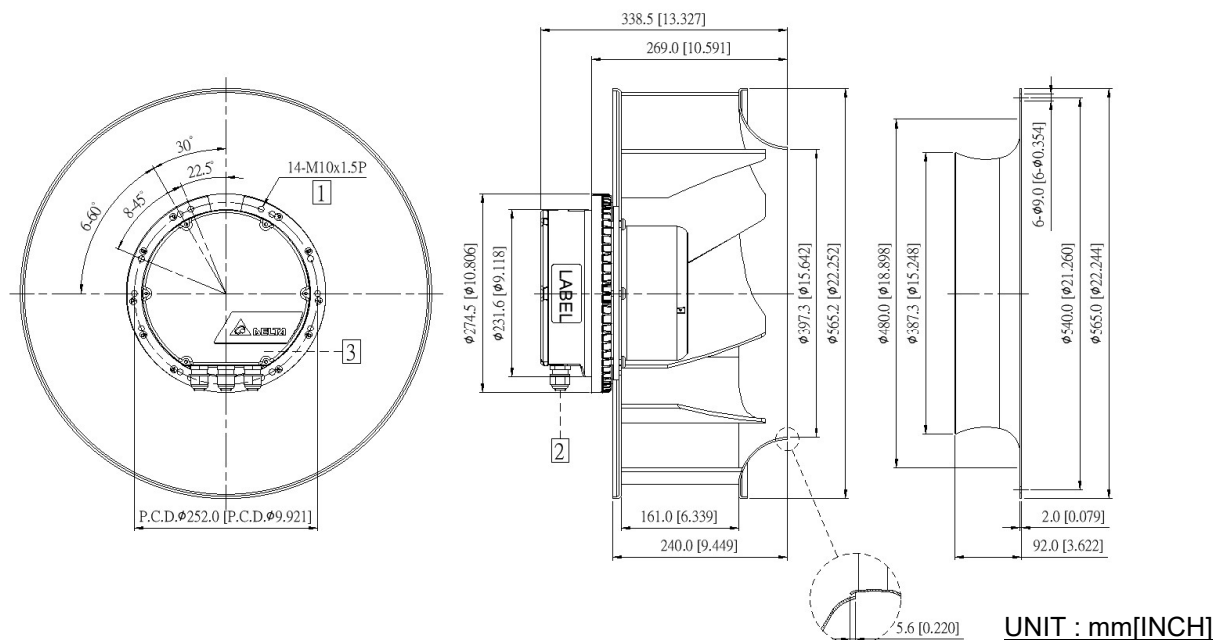


Fig1

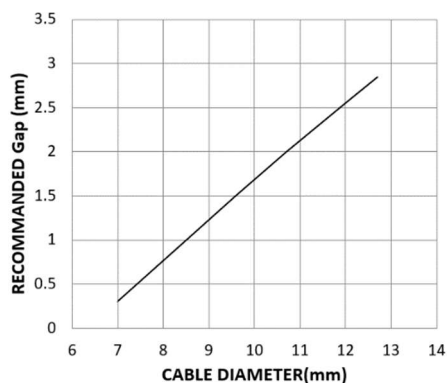
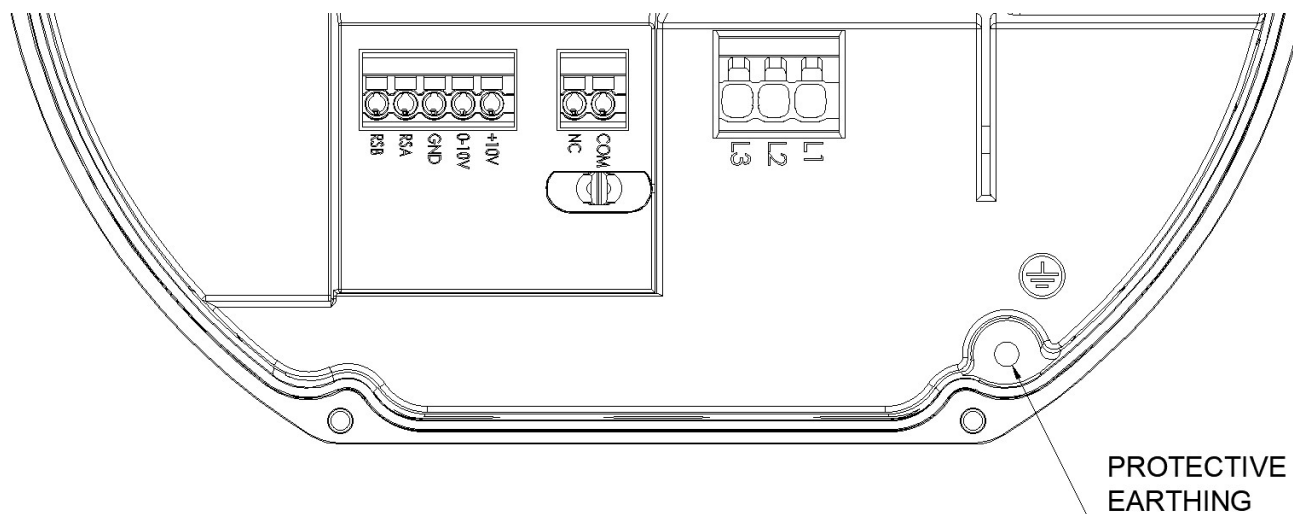


Fig2

Note :

- | | | |
|---|---|------|
| 1 | Depth of screw : 25mm max.. | Fig2 |
| 2 | Cable diameter : Ø7.0 ~ Ø12.7mm. | |
| 3 | Open the cover and refer to definition of terminal block, screw tightening torque $17 \pm 10\%$ kgf-cm. | |

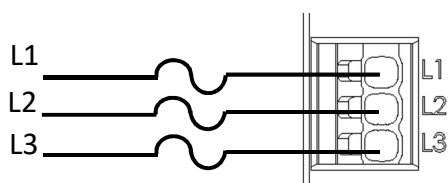
Definition of terminal block



	Text	Functions
Power	L1	AC main (3~ 380-480VAC)
	L2	AC main (3~ 380-480VAC)
	L3	AC main (3~ 380-480VAC)
Status	COM	Alarm relay, common (2A/250VAC)
	NC	Alarm relay, open by failure
Signal	+10V	10VDC output, MAX 10mA (For external potentiometer)
	0-10V	Speed control, input 0-10VDC
	GND	Ground
	RSA	RS485-A
	RSB	RS485-B

Wiring diagram

Input: 3-phase power



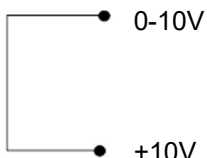
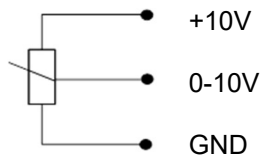
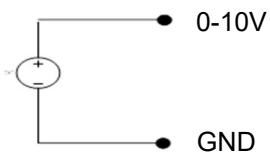
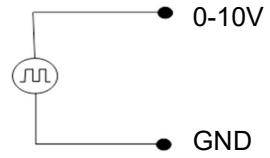
Branch Circuit Protector: 20A class CC fuse
Fuse must be UL listed and CSA certified,
or UL listed and cUL certified.

Overvoltage category - OVC II.

For use in Pollution Degree 2 Environment.

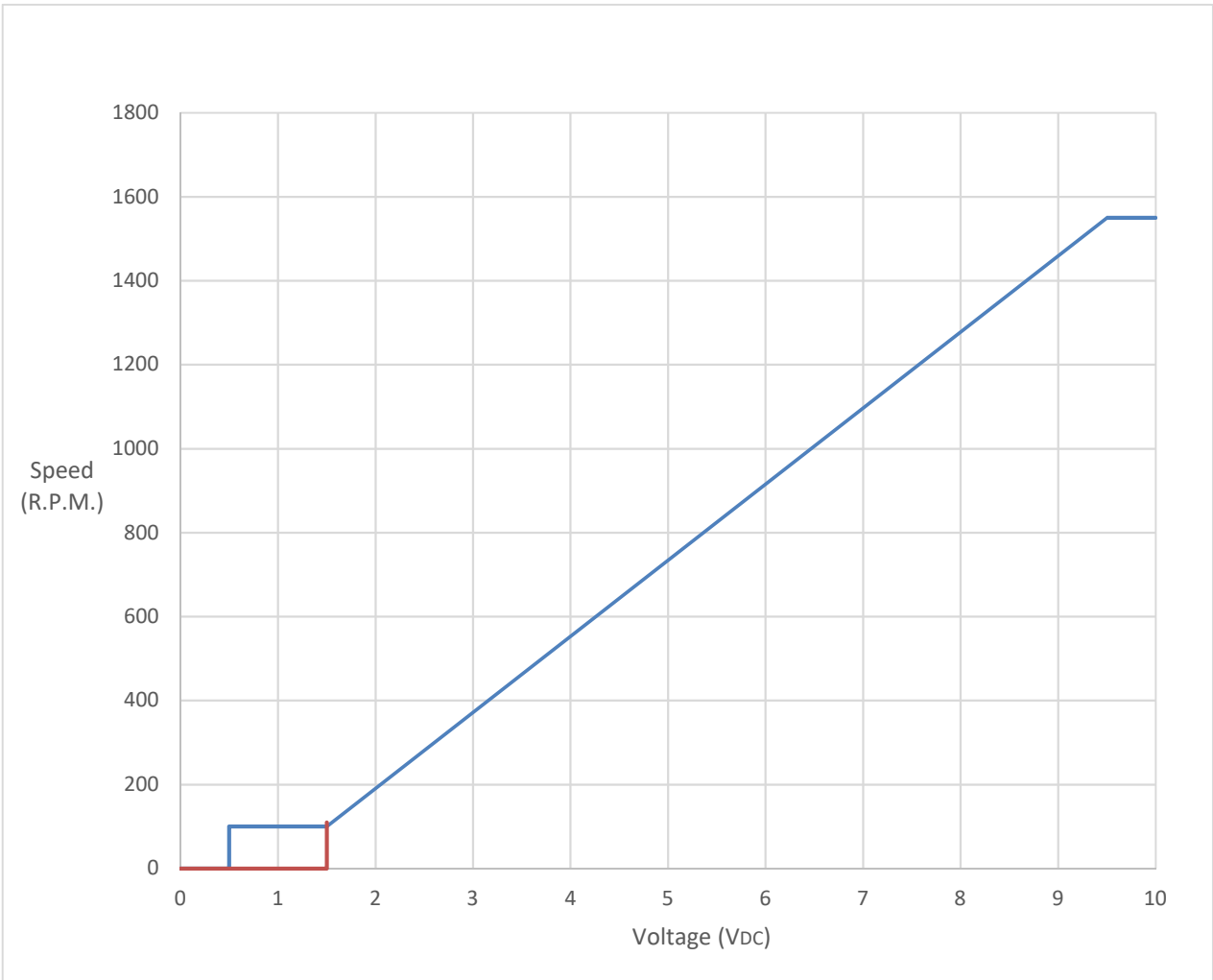
The drive is suitable for use in a circuit capable of delivering not more than 5000 rms symmetrical amperes, 480 volts maximum.

The power input wire shall be copper conductors rated 60/75°C.

Speed setting	
Full Speed 	Short 0-10V & +10V Fan will run at full speed.
	Connector 1-10kΩ variable resistor Between +10V with GND and 0-10V Vary the variable resistance · to change the '(0-10V)' voltage (0...10V), then change FAN speed °
Voltage Control 0-10V DC Source 	Use voltage source supply 0~10V_{DC} voltage DC+ : connect to (0-10V)(+) DC - : connect to GND (-)
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 °

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. Note: A MODBUS over Serial Line Cable must be shielded. At one end of each cable its shield must be connected to protective ground.																
	Voltage / PWM The speed comparison will control level. <table><tr><td>Voltage (V) ± 5%</td><td>PWM(%) ± 5%</td><td>Speed (RPM)</td></tr><tr><td>0 ~ 0.5</td><td>0 ~ 5</td><td>0</td></tr><tr><td>1.5</td><td>15</td><td>100 ± 50 RPM</td></tr><tr><td>6.0</td><td>60</td><td>920 ± 8%</td></tr><tr><td>9.5</td><td>95</td><td>1550 ± 5%</td></tr></table>			Voltage (V) ± 5%	PWM(%) ± 5%	Speed (RPM)	0 ~ 0.5	0 ~ 5	0	1.5	15	100 ± 50 RPM	6.0	60	920 ± 8%	9.5	95
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6.0	60	920 ± 8%															
9.5	95	1550 ± 5%															
Alarm state	Normal State: NC and COM will CLOSE. Alarm State: NC and COM will OPEN.																

Control Voltage VS. RPM Curve



Voltage (V_{DC}), PWM duty (%)

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