



Specification For Approval

Customer : STD

Description : EC FAN

Customer Part No. : N/A Rev :

Delta Model No. : GTW080PUU23E Rev : 00

Safety Model No. : EMBP5E5FHL

Sample Issue No. :

Sample Issue Date : 07/27'22

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

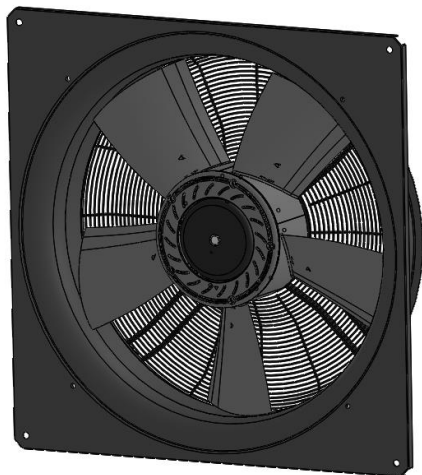
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Electronically Commutated (EC) Fan

Axial Fan

970 x 970 x 260 mm



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Technical features

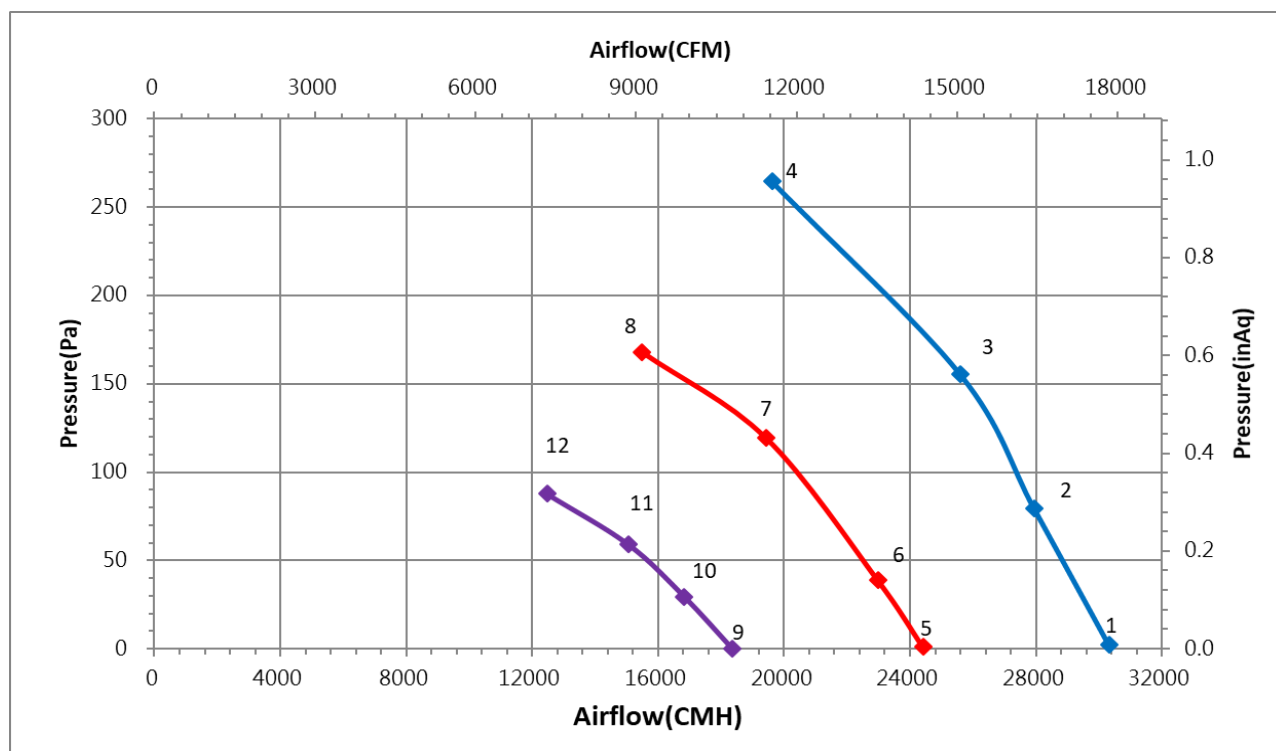
Input Side	
Nominal Voltage	3~ 400Vac 50/60Hz
Input Source	3~ 380Vac - 480Vac
Power @ Free air	2453 W
Power @ Max. load	3100 W
Output Side	
Speed (RPM)	1200
Qmax. (CMH / CFM)	30326 / 17839
Pmax. (Pa / inAq)	265 / 1.06
Noise (dB-A) @ Qmax	78
Functions	
Passive power factor correction	
Control input 0-10VDC / PWM	
Output +10VDC (±10%), max. 10mA.	
RS485 control bus (MODBUS (V1.3) RTU / 8N1)	
Alarm relay, Locked rotor protection, Soft start.	
Voltage / Current monitoring.	

NOTE : The Fan IGBT-inverter temperature can be operated at 110°C with full loading, and the rotation speed will be decreased to 80% of full loading if IGBT-inverter temperature is higher than 110°C.

Physical	
Rotation Direction	CCW, seen on rotor
Material (Impeller / Motor Frame)	Plastic / Cast iron
Material (Wallring / Fan Guard)	Steel / Steel
Bearing system	Ball bearings
Weight (kg)	50
Electrical leads	Via terminal block
Environmental	
Operating temperature range	-25 ~ +60 °C
Storage temperature range	-40 ~ +70 °C
Safety	
Safety	UL, CE
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 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 (without fanguard condition)



Measure data:

	P [Pa]	Q [CMH]	N [R.P.M.]	P1 [W]	I [A]	Lp [dB(A)]
1	0	30326	1200	2453	4.20	78
2	79	27955	1200	2731	4.53	
3	156	25601	1200	3002	4.91	
4	265	19626	1200	3083	5.04	
5	0	24421	960	1292	2.57	74
6	39	22974	960	1397	2.69	
7	119	19427	960	1583	2.93	
8	168	15468	960	1606	2.96	
9	0	18358	720	575	1.58	67
10	30	16826	720	637	1.69	
11	59	15052	720	685	1.75	
12	88	12470	720	699	1.77	

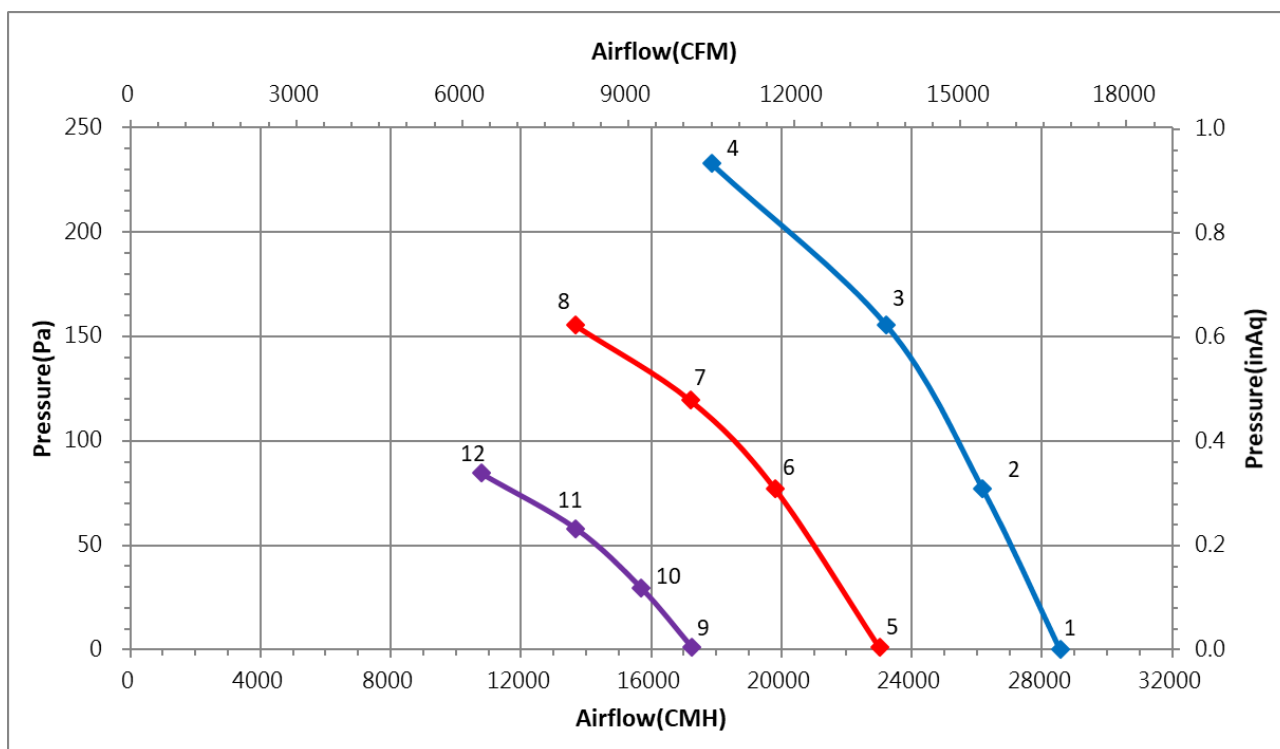
Test Condition:

- Input Voltage: 3~400Vac
- Temperature : Room Temperature
- Humidity : 65%RH
- Noise (Lp) is measured at a distance of one meter from the inlet side.
- Testing method is compliance with ISO 3745

ErP Directive:

	Actual	2015
Over all Eff (%)	49.2	36.8
Eff Grade N	52.5	40
Power (kW)	3.08	
Air flow (CMH)	19626	
Pressure (Pa)	265	
Speed (RPM)	1200	

P & Q curves (with fanguard condition)



Measure data:

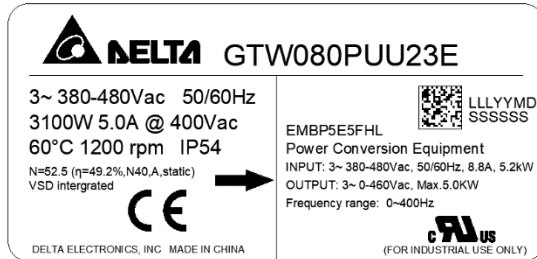
	P [Pa]	Q [CMH]	N [R.P.M.]	P1 [W]	I [A]	Lp [dB(A)]
1	0	28558	1200	2669	4.52	80
2	77	26178	1200	2895	4.80	
3	156	23223	1200	3026	4.99	
4	233	17855	1200	3095	5.10	
5	0	23011	960	1397	2.70	75
6	77	19803	960	1563	2.90	
7	119	17205	960	1577	2.92	
8	155	13668	960	1533	2.99	
9	0	17253	620	616	1.65	69
10	30	15694	620	666	1.72	
11	58	13685	620	692	1.76	
12	85	10780	620	706	1.76	

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Dimension drawing

Label :



Fan :

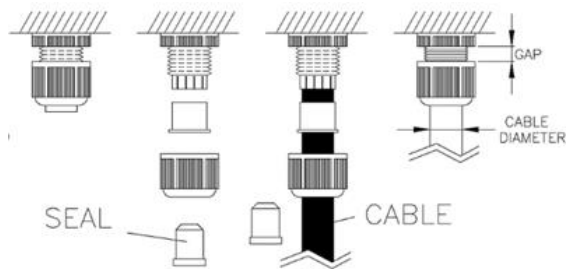
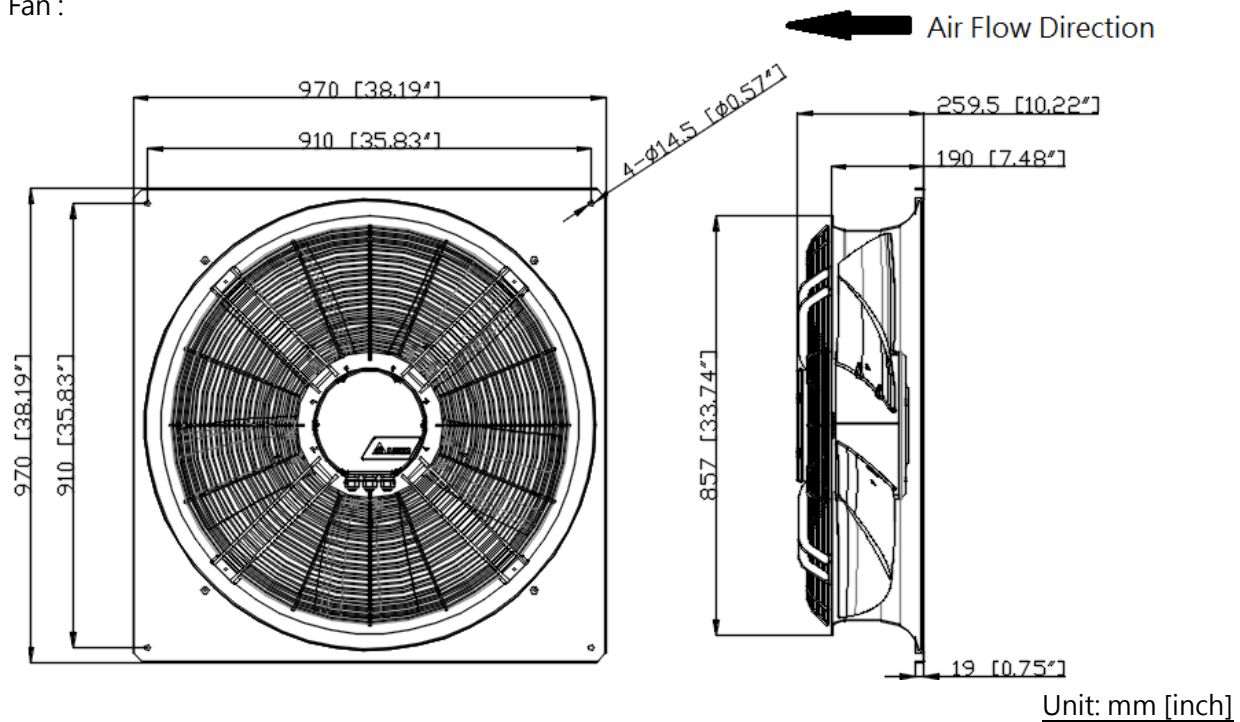


Fig1

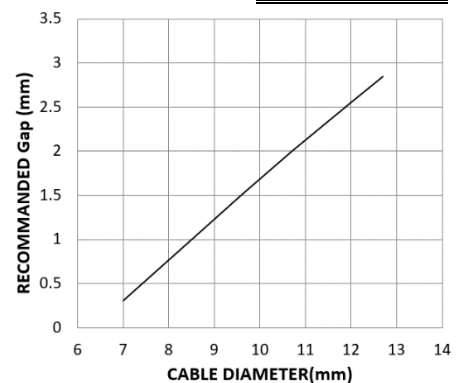
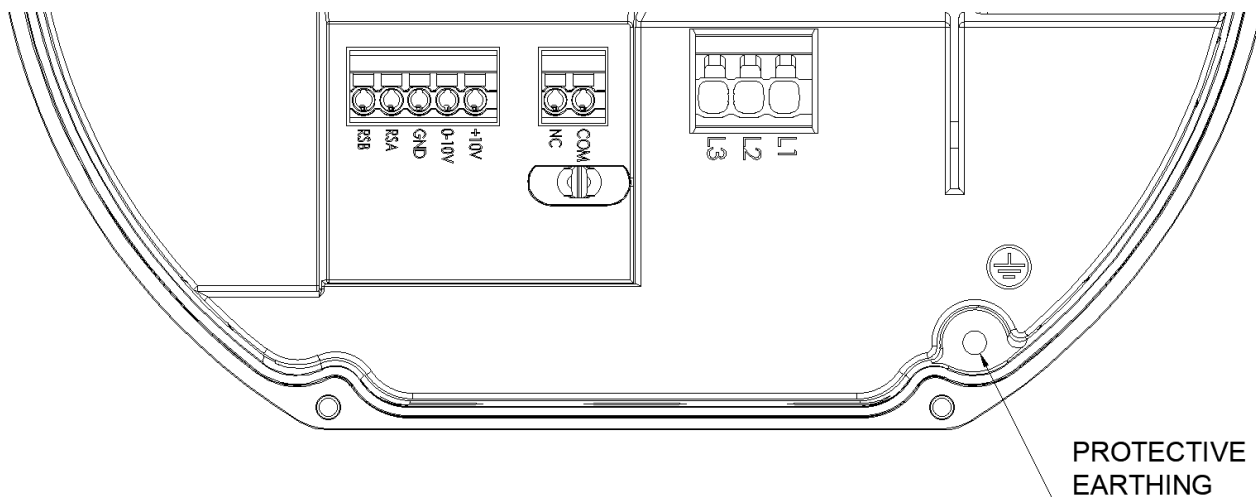


Fig2

Note :

- 1 Cable gland: M20xP1.5 (3 pcs), Material: Nylon, Cable Diameter: $\phi 7.0 \sim \phi 12.7\text{mm}$
Cable gland nut's gap refer Fig.1 & 2.
2. Open the cover and refer to definition of terminal block, screw tightening torque $20 \pm 10\%$ kgf-cm.

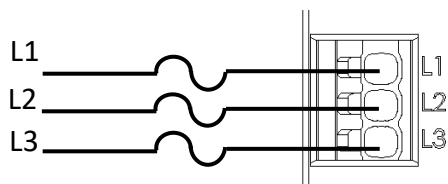
Definition of terminal block



	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.

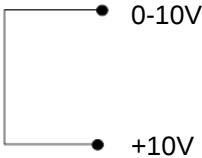
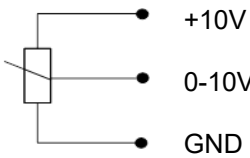
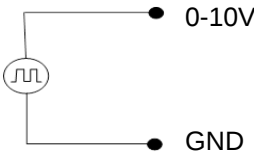
Overvoltage category - OVC II.

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.

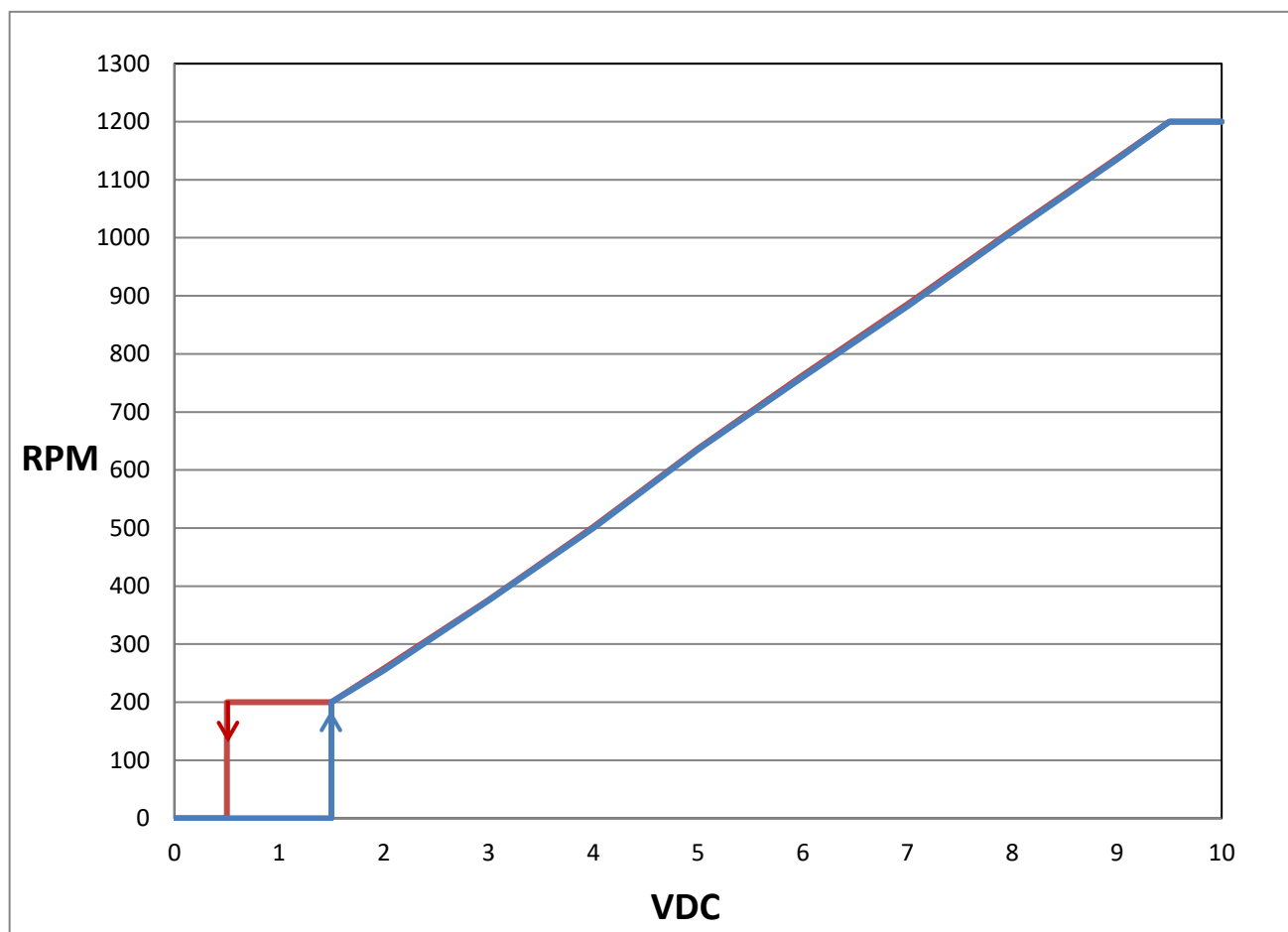
The power input wire shall be copper conductors rated 60/75°C.

Function control:

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. Cable: A MODBUS over Serial Line Cable must be shielded. At one end of each cable its shield must be connected to protective ground.																
	The speed comparison will control level <table><tr><th>Voltage (V)</th><th>PWM (%)</th><th>Speed (RPM)</th></tr><tr><td>0</td><td>0</td><td>0</td></tr><tr><td>1.5</td><td>15</td><td>200 ± 50 RPM</td></tr><tr><td>6.0</td><td>60</td><td>760 ± 8%</td></tr><tr><td>9.5</td><td>95</td><td>1200± 5%</td></tr></table>			Voltage (V)	PWM (%)	Speed (RPM)	0	0	0	1.5	15	200 ± 50 RPM	6.0	60	760 ± 8%	9.5	95
Voltage (V)	PWM (%)	Speed (RPM)															
0	0	0															
1.5	15	200 ± 50 RPM															
6.0	60	760 ± 8%															
9.5	95	1200± 5%															
Alarm state	NC and COM will OPEN																

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	%