



Specification For Approval

Customer : STD

Description : EC FAN

Customer Part No. : N/A Rev :

Delta Model No. : GTW080PUR22E Rev : 00

Safety Model No. : EMBP5E5FHL

Sample Issue No. :

Sample Issue Date : 08/18'22

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

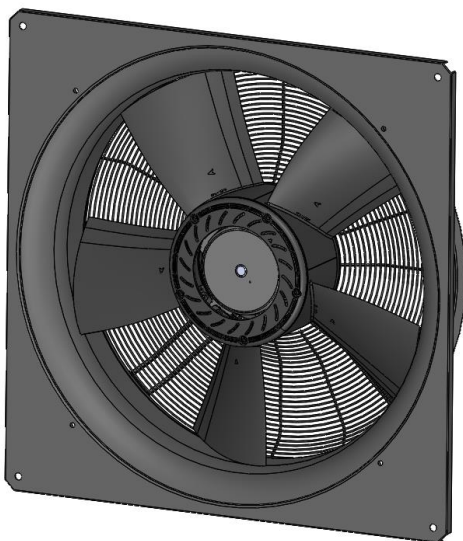
Approved by :

Date :

Electronically Commutated (EC) Fan

Axial Fan

970 x 970 x 260 mm



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Technical features

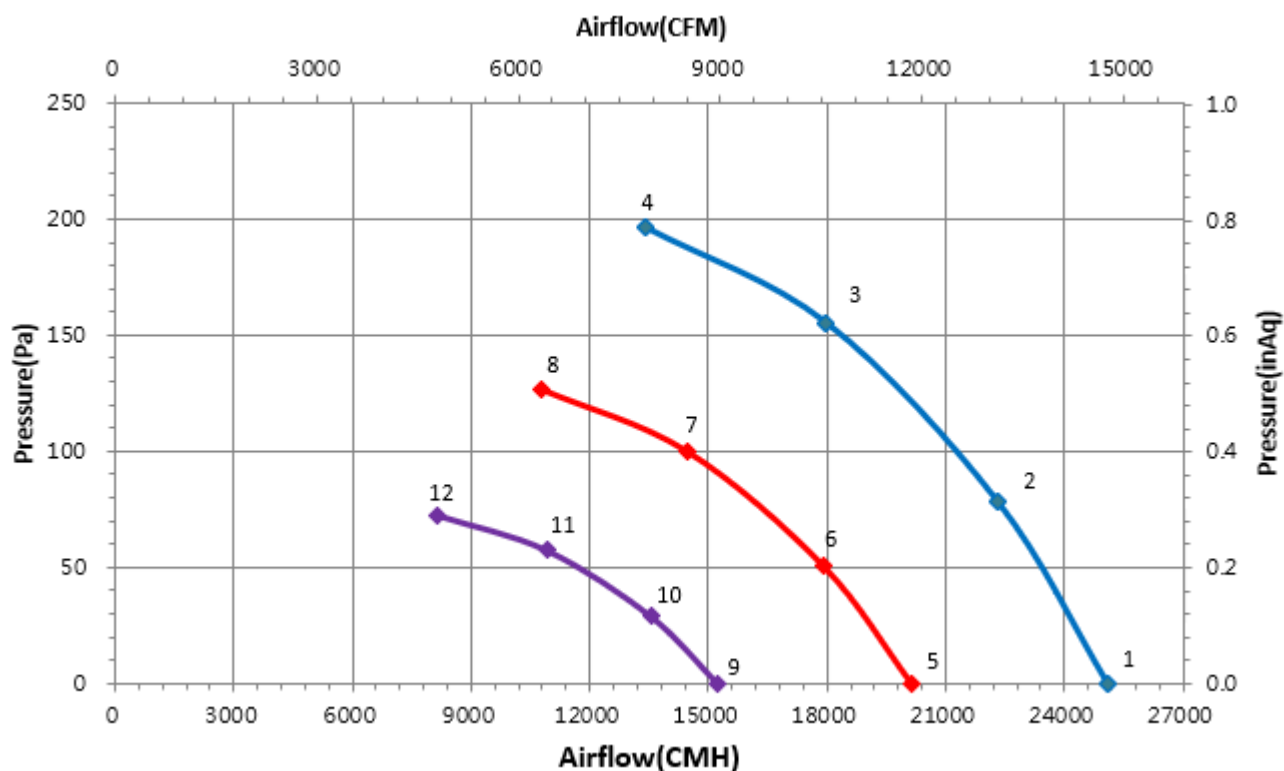
Input Side	
Nominal voltage	3~ 400Vac 50/60Hz
Input source	3~ 380Vac - 480Vac
Power @ free air	1690 W
Power @ max. load	2200 W
Output Side	
Speed (RPM)	1020
Qmax. (CMH / CFM)	25077 / 14751
Pmax. (Pa / inAq)	196 / 0.787
Noise (Lw , dB-A) @ Qmax	75 (Max 80)
Functions	
Passive power factor correction	
Control 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)	48
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 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 (Without fanguard condition)



Measure data:

	P [Pa]	Q [CMH]	N [R.P.M.]	P1(ref.) [W]	I(ref.) [A]	Lp [dB(A)]
1	0	25077	1020	1686	2.94	75
2	78	22293	1020	1928	3.25	
3	155	17987	1020	2016	3.36	
4	196	13403	1020	2082	3.46	
5	0	20160	820	876	1.85	70
6	51	17921	820	1002	2.02	
7	100	14460	820	1047	2.08	
8	127	10775	820	1082	2.13	
9	0	15243	620	379	1.10	64
10	29	13550	620	433	1.17	
11	57	10933	620	453	1.19	
12	72	8147	620	468	1.21	

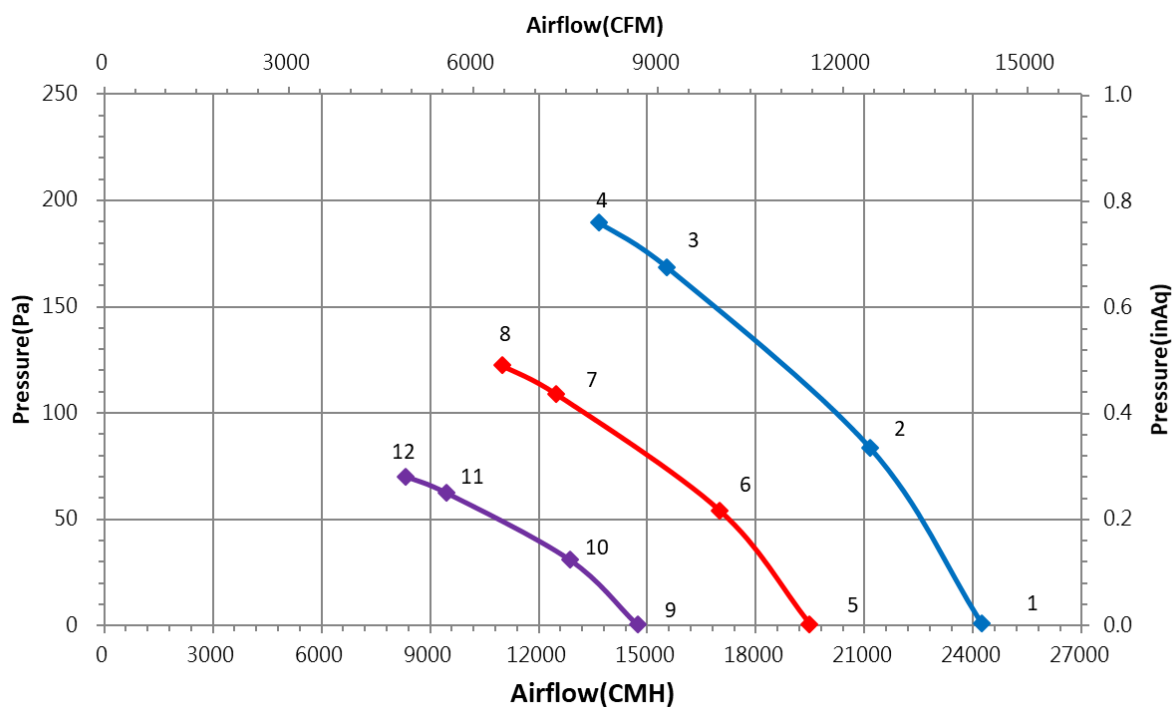
Test condition:

- 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 (%)	41.6	35.7
Eff Grade N	46.0	40
Power (kW)	2.04	
Air flow (CMH)	16212	
Pressure (Pa)	177	
Speed (RPM)	1020	

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	24234	1020	1637	3.11	76
2	84	21147	1020	1846	3.28	
3	169	15542	1020	1915	3.37	
4	190	13675	1020	1966	3.48	
5	0	19483	820	851	1.62	72
6	54	17001	820	959	1.70	
7	109	12494	820	995	1.75	
8	122	10993	820	1021	1.81	
9	0	14731	620	368	0.70	66
10	31	12854	620	415	0.74	
11	62	9447	620	430	0.76	
12	70	8312	620	442	0.78	

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.

Dimension drawing

Label :

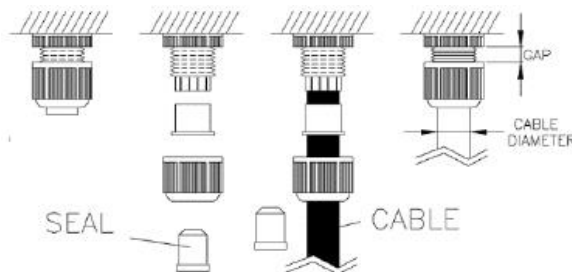
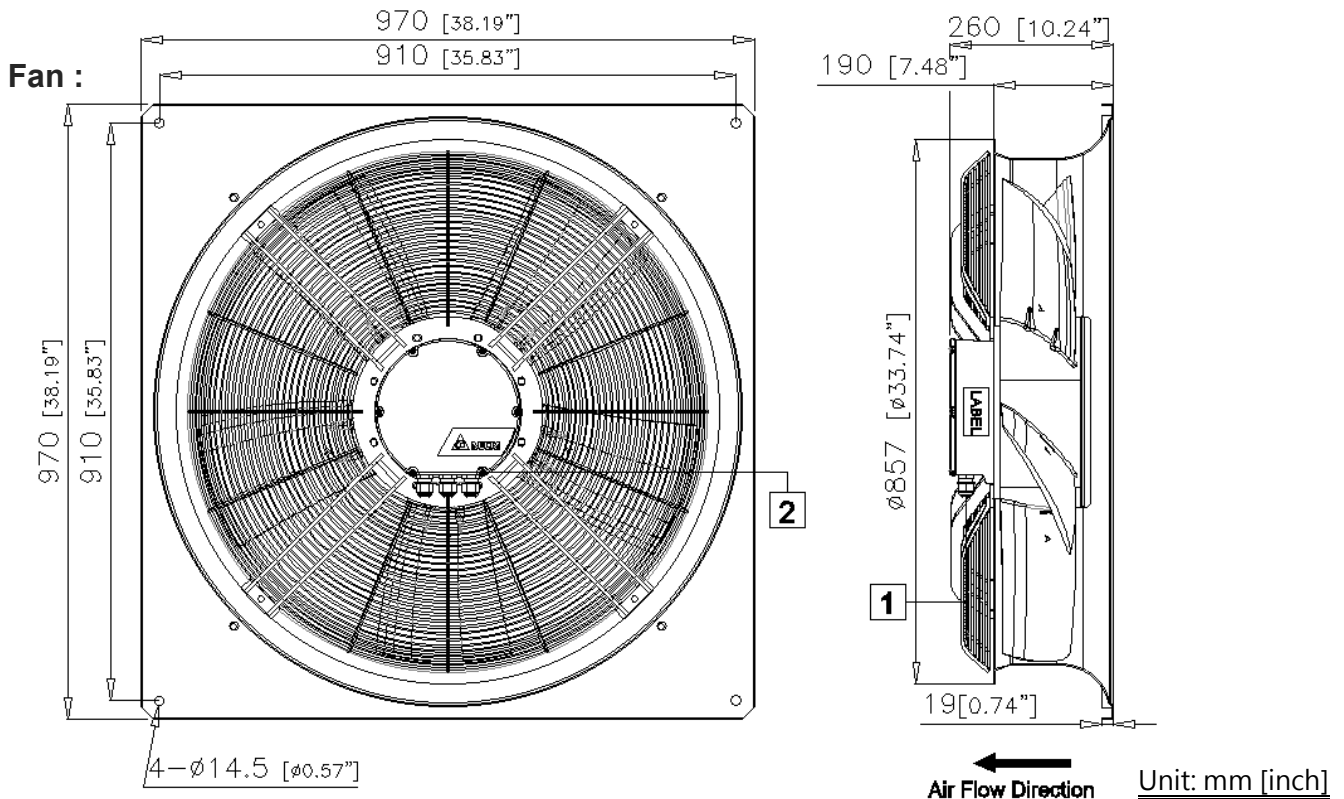
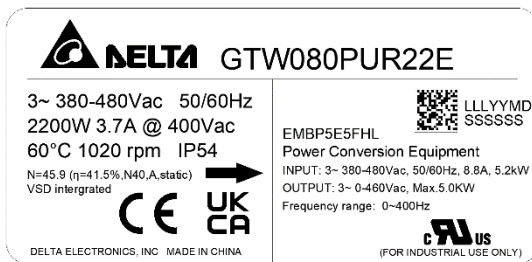


Fig.1

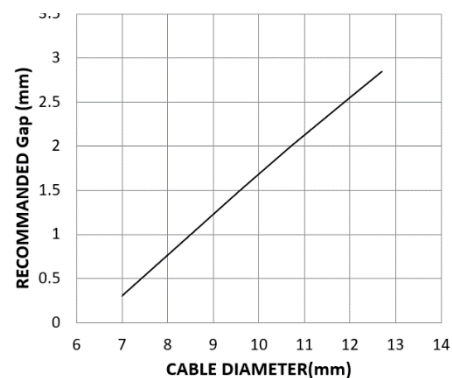
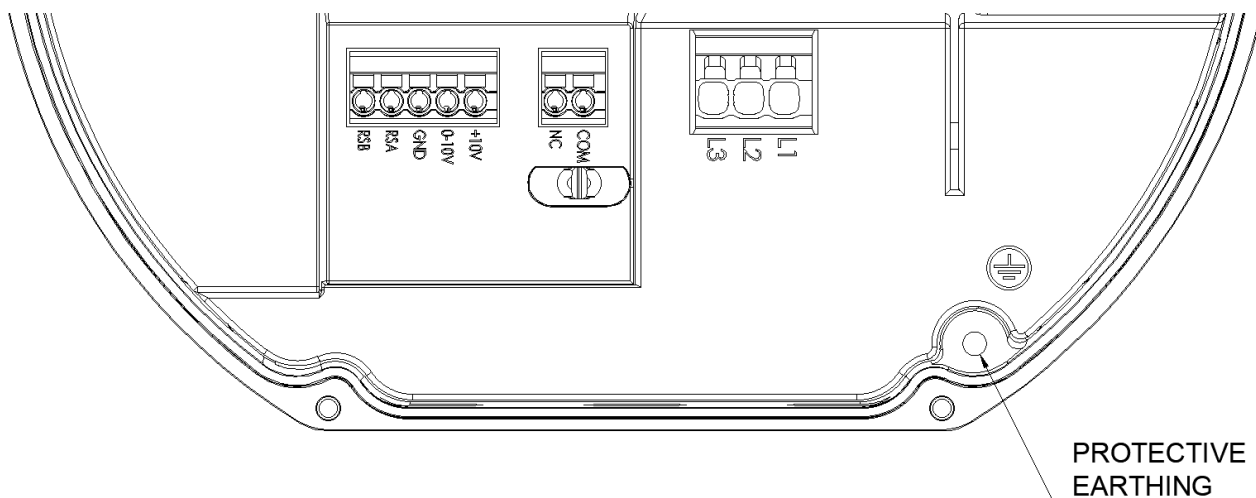


Fig.2

Note:

1. Cable gland: M20xP1.5 (3 pcs), Material: Nylon, Cable Diameter: $\phi 7.0 \sim \phi 12.7$ mm
Cable gland nut's gap refer Fig.1 & 2.
2. Open the cover and refer to definition of terminal block, screw tightening torque $17 \pm 10\%$ kgf-cm.

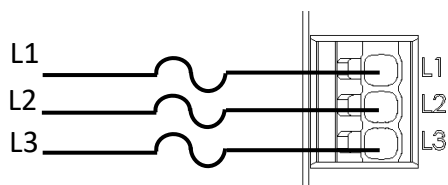
Definition of Terminal Block



	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.

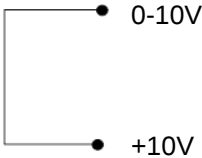
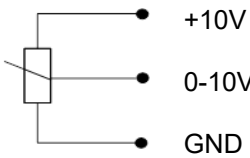
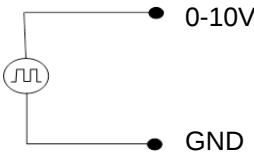
Overvoltage category - OVC II.

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.

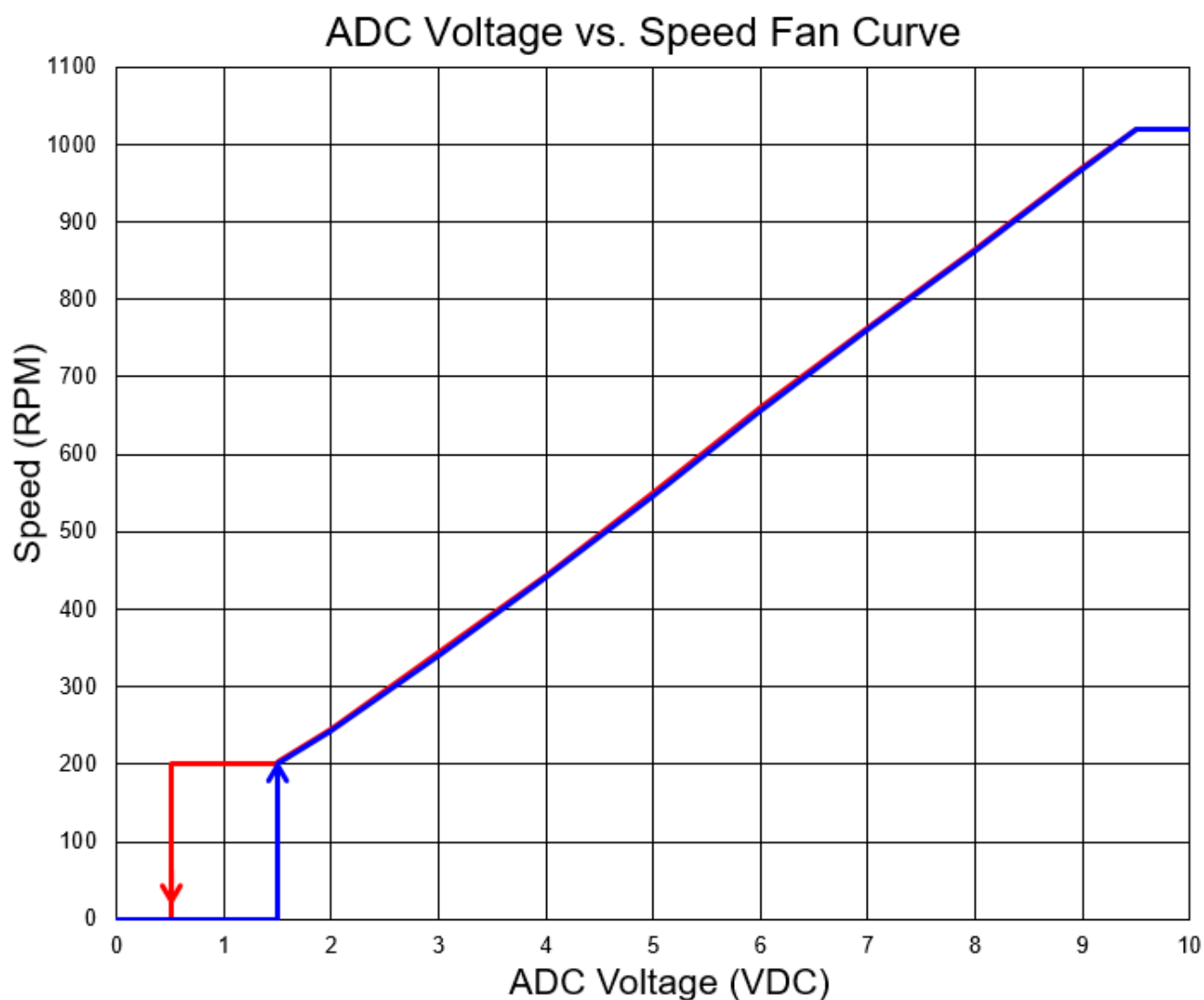
The power input wire shall be copper conductors rated 60/75°C.

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.																	
Voltage/PWM control	The speed comparison will control level <table><tr><td>Voltage (V)</td><td>PWM (%)</td><td>Speed (RPM)</td></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>660 ± 8%</td></tr><tr><td>9.5</td><td>95</td><td>1020± 5%</td></tr></table>			Voltage (V)	PWM (%)	Speed (RPM)	0	0	0	1.5	15	200 ± 50 RPM	6.0	60	660 ± 8%	9.5	95	1020± 5%
Voltage (V)	PWM (%)	Speed (RPM)																
0	0	0																
1.5	15	200 ± 50 RPM																
6.0	60	660 ± 8%																
9.5	95	1020± 5%																
Alarm state	NC and COM will OPEN																	

Control Voltage VS. RPM Curve



Voltage (V_{DC}), 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	%