

SUNON

SPECIFICATION FOR APPROVAL FOR REFERENCE

CUSTOMER :
DESCRIPTION : EC 355 CENTRIFUGAL FAN
DIMENSION : 364X364X235 MM
SUNON MODEL : CBIP535MH-1000U-IJ9
SUNON SEQ NO :
REV : 0
ISSUE DATE : 2025.10.01
APPROVED BY CUSTOMER :

Preliminary Data Sheet is for reference only, final specification might be changed according to design verification (or mass production) data.

APPROVED BY	JUSTIN	CHECKED BY	TOM	DESIGNED BY	NANCY
-------------	--------	------------	-----	-------------	-------

SUNONWEALTH ELECTRIC MACHINE INDUSTRY CO., LTD.

NO.30, LN. 296, XINYA RD., QIANZHEN DIST., KAOHSIUNG CITY 80673, TAIWAN

TEL: +886-7-8135888 FAX: +886 7 213 5125

1. SCOPE

THIS SPECIFICATION DEFINES THE ELECTRICAL AND MECHANICAL CHARACTERISTICS OF THE EC CENTRIFUGAL FAN.

2. CHARACTERISTICS

ITEM	DESCRIPTION
NOMINAL VOLTAGE	3~ 400 VAC 50/60HZ
RATED VOLTAGE	3~ 380 – 480 VAC
RATED POWER	2503 W @ FREE AIR
MAX. LOAD POWER	3600 W
SPEED CONTROL	PWM RS485 (MODBUS-RTU) VOLTAGE CONTROL(0-10 VDC) CURRENT CONTROL(4-20mA)
RATED SPEED	3900 RPM
MAX. AIRFLOW	8476 m ³ /h 4986 CFM
MAX. STATIC PRESSURE	1705 Pa 6.85 inch-H ₂ O
INSULATION CLASS	F
PROTECTION CLASS	I
INGRESS PROTECTION	IP55
LIFE EXPECTANCY	60,000 HOURS AT 40 °C WITH 15~65% RH
DIRECTION OF ROTATION	CLOCKWISE FROM IMPELLER SIDE
EMC	EN61000-6-2,EN61000-6-3
SAFETY	CSA C22.2 N0.77 ; UL 1004-7 + 60730-1 ; EN 60335-1(IN PROCESS)

3. MECHANICAL

3.1	BEARING SYSTEM	:	BALL BEARING SYSTEM
3.2	FRAME	:	NA
3.3	FAN GUARD	:	NA
3.4	SUPPORT BRACKET	:	NA
3.5	SUPPORT PLATE	:	NA
3.6	INLET NOZZLE	:	GALVANISED SHEET STEEL
3.7	BLADE	:	ALUMINUM SHEET
3.8	ELECTRONIC ENCLOSURE	:	DIE-CAST ALUMINUM
3.9	IMPELLER BALANCE GRADE	:	G6.3 PER ISO 1940-1:2003(E)
3.10	WEIGHT		32.0 KG (REF.)

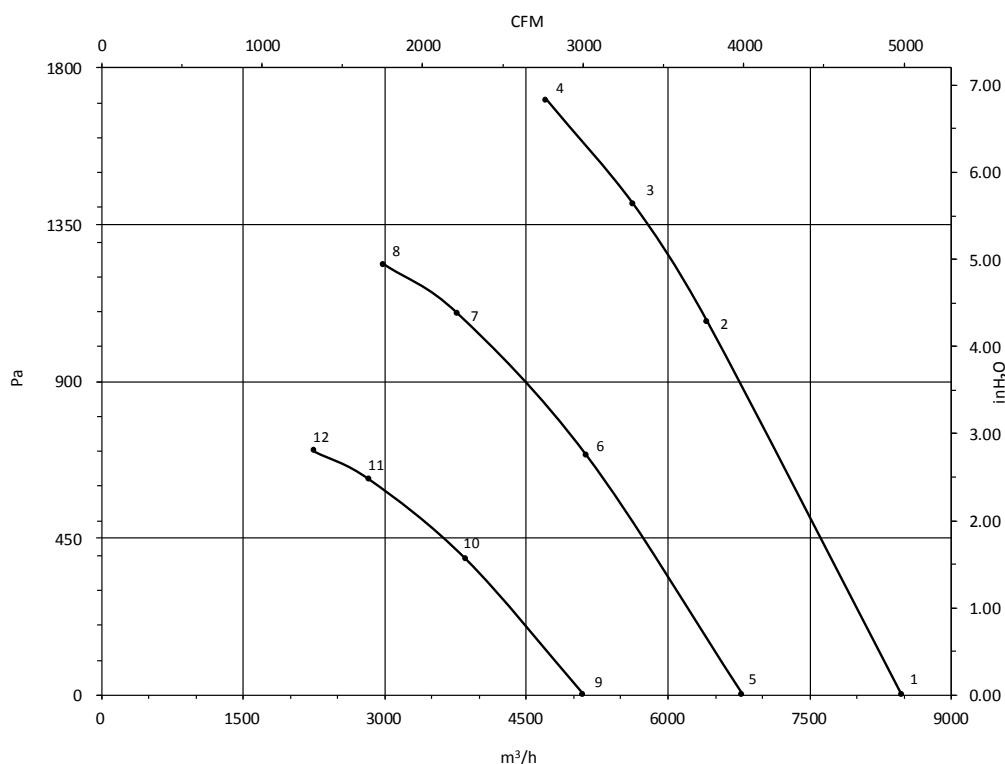
4. ENVIRONMENTAL

4.1	OPERATING TEMPERATURE RANGE	:	-40 TO + 40 DEGREE C
4.2	STORAGE TEMPERATURE RANGE	:	-40 TO + 80 DEGREE C

5. PROTECTION

- ☒ AUTOMATIC RESTART
- ☒ SOFT START
- ☒ OVER TEMPERATURE PROTECTION
- ☒ OVER LOAD PROTECTION
- ☒ OVER VOLTAGE PROTECTION
- ☒ LOCKED ROTOR PROTECTION

6. AIR FLOW & STATIC PRESSURE CURVE



MEASURE DATA:

Index	Static pressure		Air volume		Speed	Power	Current	Lp
	Pa	inH ₂ O	m ³ /h	CFM	R.P.M.	W	A	dB(A)
1	0	0.00	8476	4986	3900	2503	4.13	105
2	1071	4.30	6414	3773	3900	3438	5.68	
3	1407	5.65	5629	3311	3900	3569	5.90	
4	1705	6.85	4712	2772	3900	3535	5.84	
5	0	0.00	6785	3991	3100	1342	2.27	100.2
6	686	2.75	5134	3020	3100	1823	3.08	
7	1093	4.39	3772	2219	3100	1892	3.19	
8	1234	4.96	2992	1760	3100	1874	3.16	
9	0	0.00	5105	3003	2350	615	1.08	94
10	388	1.56	3863	2272	2350	823	1.45	
11	619	2.48	2838	1669	2350	846	1.49	
12	699	2.81	2251	1324	2350	806	1.42	

TEST CONDITION:

INPUT VOLTAGE: NOMINAL VOLTAGE.

TEMPERATURE: ROOM TEMPERATURE.

MEASURED WITH INLET NOZZLE

NOISE (LP) IS MEASURED AT A DISTANCE OF ONE METER FROM THE INLET SIDE.

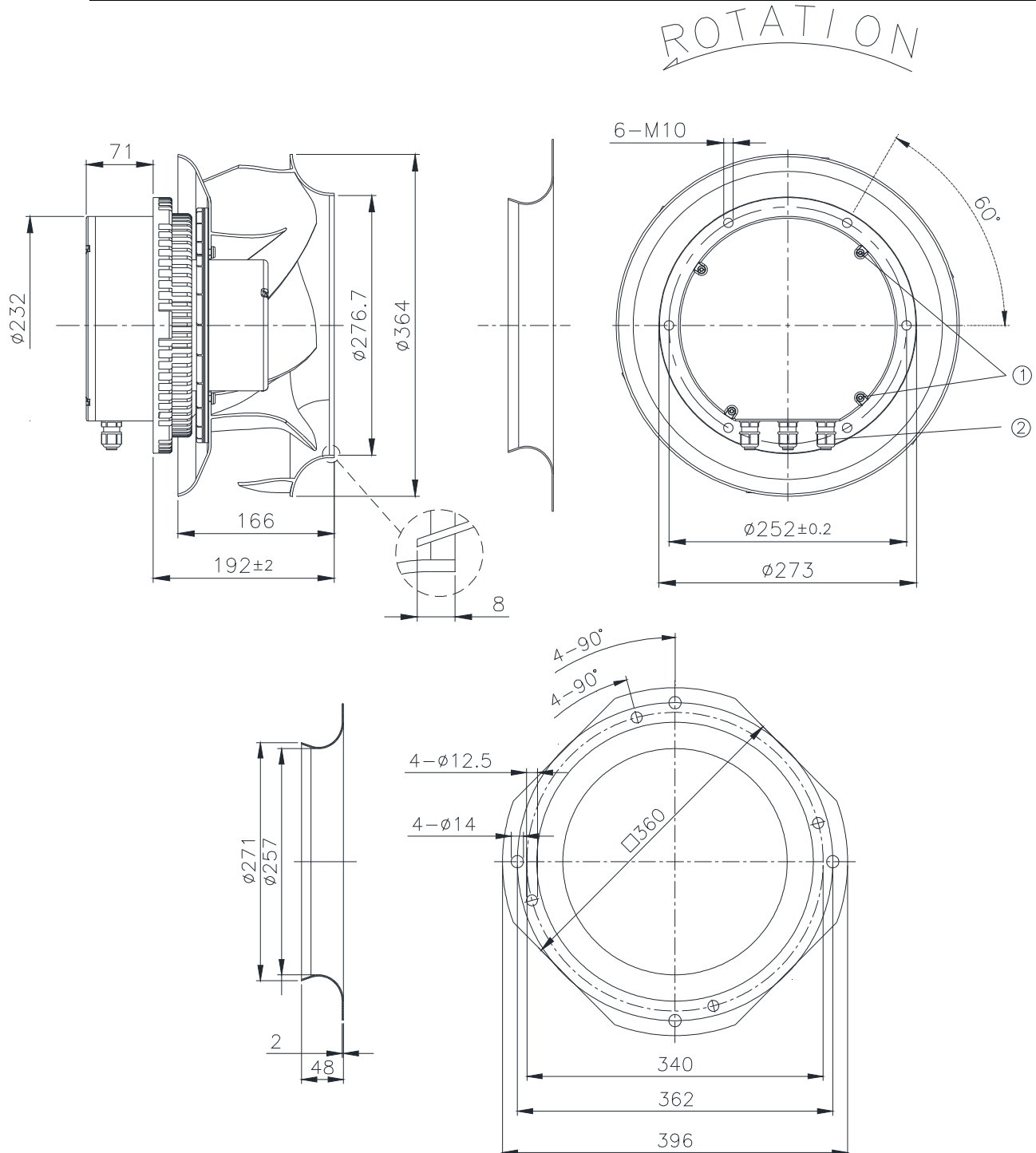
ERP DIRECTIVE:

	Actual	2026
Over all Eff%	63.1	59.3
Eff Grade N	66.3	64
Power(kW)	3.535	
Air Flow(m ³ /h)	4712	
Pressure(Pa)	1705	
Speed(RPM)	3858	

NOTE: The airflow and static pressure are measured with SUNON' s specific fixture.

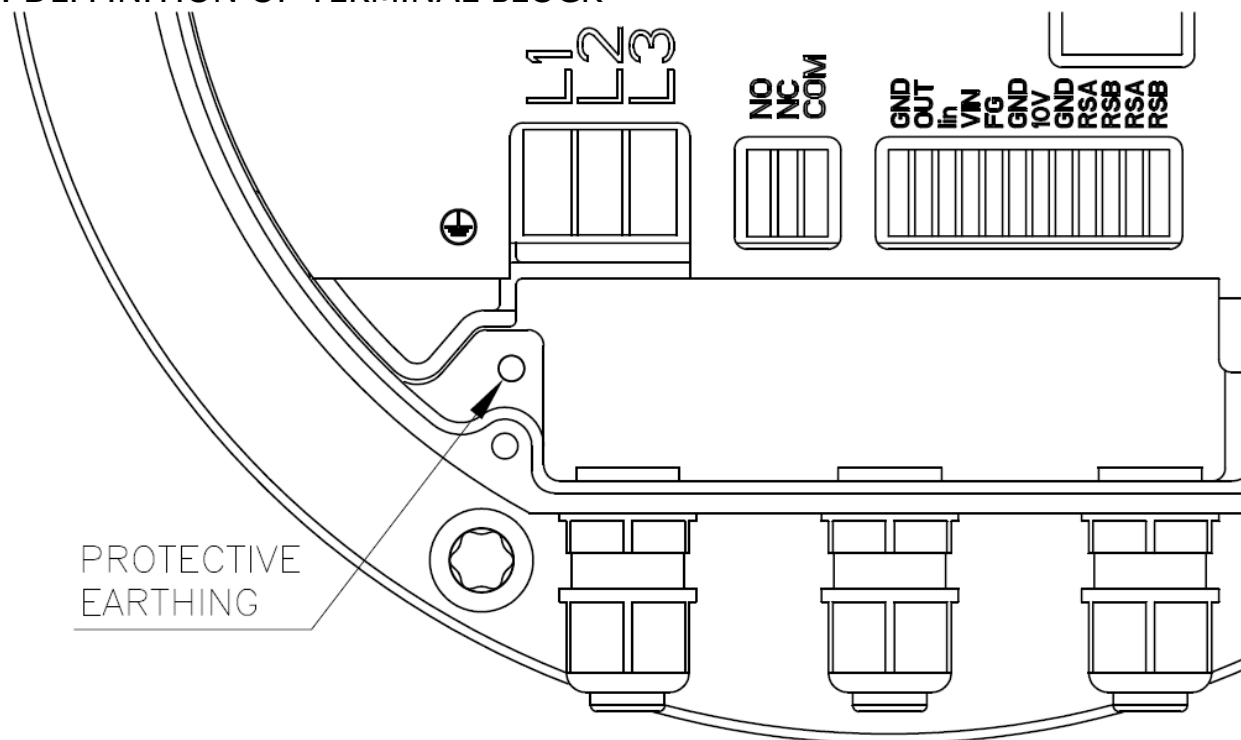
7. DIMENSIONS

1	SCREW	TIGHTTENING TORQUE: 13~17 KGF-CM
2	CABLE GLAND	CABLE DIAMETER: 4~10 mm, TIGHTTENING TORQUE: 34~47 KGF-CM



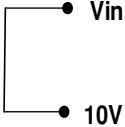
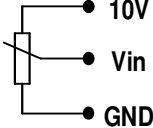
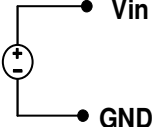
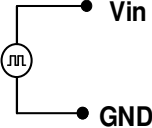
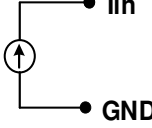
UNIT:mm

8. DEFFINATION 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, close by failure
	NC	Alarm relay, open by failure
	COM	Alarm relay, common (2A/250VAC)
Signal	GND	Ground
	OUT	Control Voltage output 0-10 V
	lin	Speed control, input 4-20 mA
	VIN	Speed control, input 0-10 VDC
	FG	Frequency generator (FG) signal
	GND	Ground
	10V	+10 V output, MAX 10 mA
	GND	Ground
	RSA	RS485-A
	RSB	RS485-B
	RSA	RS485-A
	RSB	RS485-B

9. SPEED SETTING

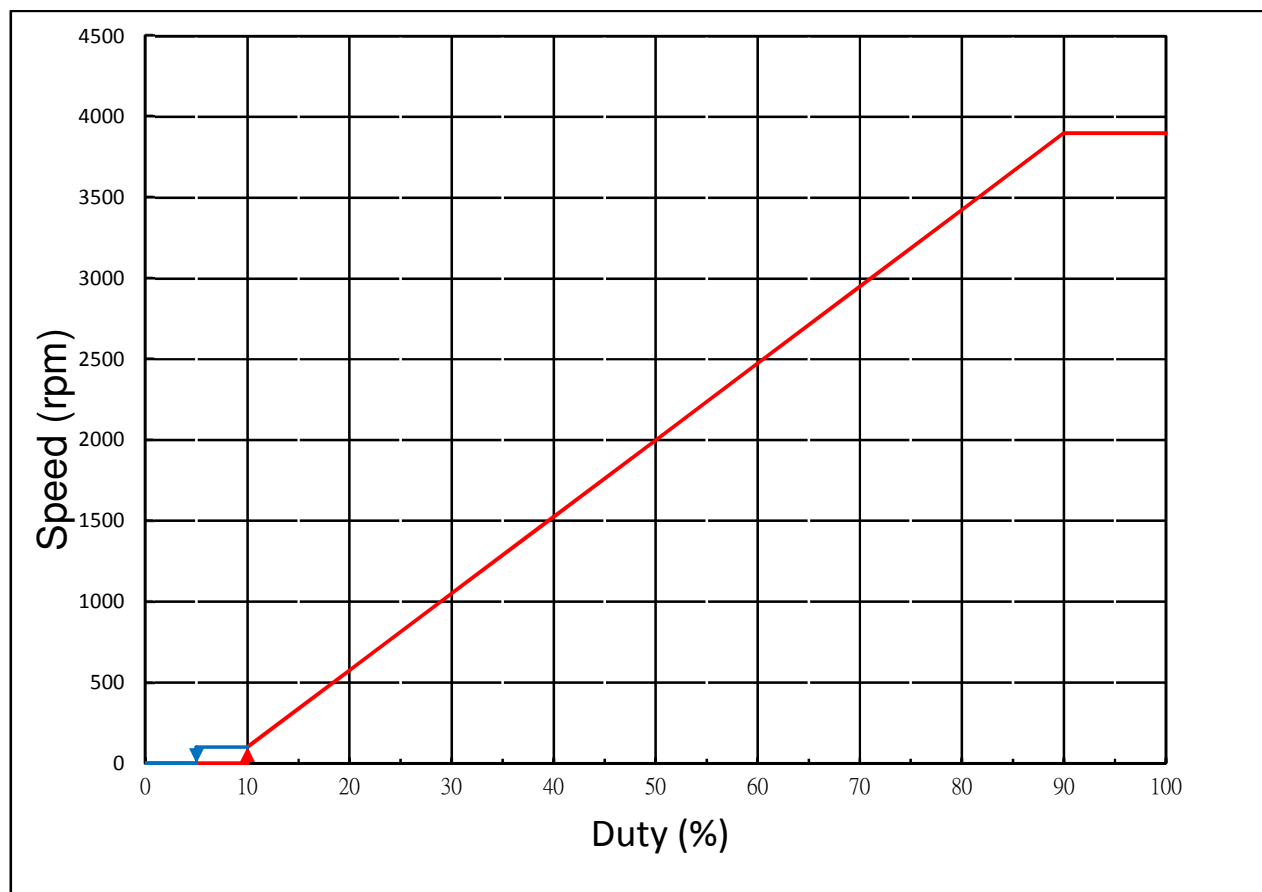
Full Speed 	Short Vout & Vin Fan will run at full speed.
Voltage Control A 	Connector 1-10kΩ variable resistor Between 10V with GND and Vin (0-10V/PWM) Vary the variable resistance, to change the 'Vin' voltage (0-10V), then change FAN speed.
Voltage Control B 0-10V DC Source 	Use voltage source supply 0~10V_{DC} voltage DC+ : connector to Vin(+) DC- : connector to GND(-)
PWM Control PWM Generator 	PWM duty control PWM amplitude is 10V_{DC}(±5%) Frequency Range is 100Hz-100kHz - PWM duty higher than 10%, 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 - 4.0mA → Fan stop - 5.6mA → Fan start up - 18.6mA → Maximum Speed

10. SIGNAL FUCTION

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.															
Control O/P	The analog signal level is the derivative of current control level. <table><tr><th>Current (mA)</th><th>Control O/P (VDC) (REF)</th></tr><tr><td>4.0</td><td>0</td></tr><tr><td>5.6</td><td>1.0</td></tr><tr><td>11.9</td><td>5.0</td></tr><tr><td>18.6</td><td>9.0</td></tr></table>	Current (mA)	Control O/P (VDC) (REF)	4.0	0	5.6	1.0	11.9	5.0	18.6	9.0					
Current (mA)	Control O/P (VDC) (REF)															
4.0	0															
5.6	1.0															
11.9	5.0															
18.6	9.0															
Voltage/PWM control	The speed comparison will control level <table><tr><th>Voltage (V)</th><th>PWM (%)</th><th>Speed (RPM) (REF)</th></tr><tr><td>0</td><td>0</td><td>0</td></tr><tr><td>1.0</td><td>10</td><td>100 ± 50 RPM</td></tr><tr><td>5.0</td><td>50</td><td>2000± 10%</td></tr><tr><td>9.0</td><td>90</td><td>3900± 5%</td></tr></table>	Voltage (V)	PWM (%)	Speed (RPM) (REF)	0	0	0	1.0	10	100 ± 50 RPM	5.0	50	2000± 10%	9.0	90	3900± 5%
Voltage (V)	PWM (%)	Speed (RPM) (REF)														
0	0	0														
1.0	10	100 ± 50 RPM														
5.0	50	2000± 10%														
9.0	90	3900± 5%														
Current control	The speed comparison will control level <table><tr><th>Current (mA)</th><th>Speed (RPM) (REF)</th></tr><tr><td>4.0</td><td>0</td></tr><tr><td>5.6</td><td>100 ± 50 RPM</td></tr><tr><td>11.9</td><td>2000 ± 10%</td></tr><tr><td>18.6</td><td>3900 ± 5%</td></tr></table>	Current (mA)	Speed (RPM) (REF)	4.0	0	5.6	100 ± 50 RPM	11.9	2000 ± 10%	18.6	3900 ± 5%					
Current (mA)	Speed (RPM) (REF)															
4.0	0															
5.6	100 ± 50 RPM															
11.9	2000 ± 10%															
18.6	3900 ± 5%															
Alarm state	1. NC and COM will OPEN 2. NO and COM will CLOSE.															
FG Signa	$V_{CE(sat)} = 0.7V \text{ MAX.}$ $V_{FG} = 30.0V \text{ MAX.}$ $I_c = 5mA \text{ MAX.}$ $R \geq V_{FG} / I_c$ Frequency generator waveform $V_{FG} \pm 5\%$ $0.7V \text{ MAX.}$ RUNNING BLADE LOCKED RUNNING TS T1 T2 OR $N=R.P.M$ $TS=60/N(SEC)$ 1 PULSE PER REVOLUTION $T1=T2=1/2 TS$															

11. VOLTAGE 、PWM 、CURRENT CONTROL VS SPEED CURVE

VOLTAGE	0	0.5	1	2	3	4	5	6	7	8	9	10
PWM DUTY(%)	0	5	10	20	30	40	50	60	70	80	90	100
Current Control(mA)	4	5	5.6	6.9	8.4	10	11.9	13.5	15.1	16.7	18.6	20
Speed(rpm)	0	100	100	575	1050	1525	2000	2475	2950	3425	3900	3900



NOTE: It is tested under free air condition. The same spec is not able to apply in static pressure condition.