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SPECIFICATION FOR APPROVAL
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Customer:

Description:	EC FAN		
Customer P/N:		REV:	
Delta Model NO.:	GTA063EUD19R	Safety Model NO.:	
Sample Rev:	X01	Issue NO:	
Sample Issue Date:	MAR.10.2017	Quantity:	

1. SCOPE:

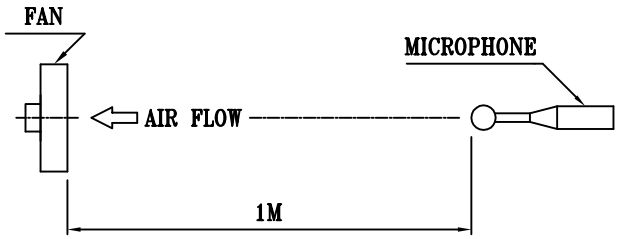
THIS SPECIFICATION DEFINES THE ELECTRICAL AND MECHANICAL CHARACTERISTICS OF THIS AXIAL FAN .

2. NOMINAL DATA:

UNLESS SPECIFIED, ALL READINGS AND TESTS ARE BASED ON 25 DEG C, 65% RH.

ITEM	DESCRIPTION
NOMINAL VOLTAGE	1ø 230 VAC 50/60Hz
NOMINAL VOLTAGE RANGE	1ø 200 - 277 VAC
INPUT POWER @ FREE-AIR	530 W
INPUT POWER @ MAX. LOAD	800 W
INPUT CURRENT (MAX)	4.00 A
SPEED	1100 R.P.M. (REF.)
MAX. AIR FLOW (AT ZERO STATIC PRESSURE)	12270 (MIN. 11043) M^3/H 7222 (MIN. 6500) CFM
MAX. AIR PRESSURE	160 (MIN. 129.6) Pa 0.642 (MIN. 0.520) inchH_2O
ACOUSTICAL NOISE (AVG.) @ FREE-AIR	71.5 (MAX 76.5) dB(A)

NOTES: 1. ALL READINGS ARE MEASURED AFTER STABLY WARMING UP THROUGH 10 MINUTES.
2. THE VALUES WRITTEN IN PARENS , ( ), ARE LIMITED SPEC.
3. ACOUSTICAL NOISE MEASURING CONDITION:



NOISE IS MEASURED AT NOMINAL VOLTAGE IN FREE AIR IN ANECHOIC CHAMBER WITH B & K SOUND LEVEL METER WITH MICROPHONE AT A DISTANCE OF ONE METER FROM THE FAN INTAKE.

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3. FEATURES:

DIRECTION OF ROTATION	COUNTER-CLOCKWISE, SEEN ON ROTOR
BEARING SYSTEM	BALL BEARINGS
WEIGHT	27 K.G.
MATERIAL OF ELECTRONICS HOUSING	DIE-CAST ALUMINUM
MATERIAL OF IMPELLER	PP+40%GF
ELECTRICAL LEADS	VIA TERMINAL BLOCK
MOTOR PROTECTION	OVER TEMPERATURE PROTECTED
LEAKAGE CURRENT	<= 3.5 mA
INSULATION CLASS	F
TYPE OF PROTECTION	IP54
PROTECTION CLASS	I
POWER FACTOR CORRECTION	ACTIVE
OPERATING TEMPERATURE	-25~+60 °C (REF.)
STORAGE TEMPERATURE	-40~+70 °C (REF.)
EMC	EN61000-6-2/4 , EN61000-3-2/3
SAFETY	* UL , cUL , TUV
LIFE EXPECTANCE	* 60,000 HOURS CONTINOUS OPERATION AT 40 °C WITH 15 ~ 65 %RH.
FUNCTIONS	- CONTROL INPUT 0-10VDC or PWM PATTERN or 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

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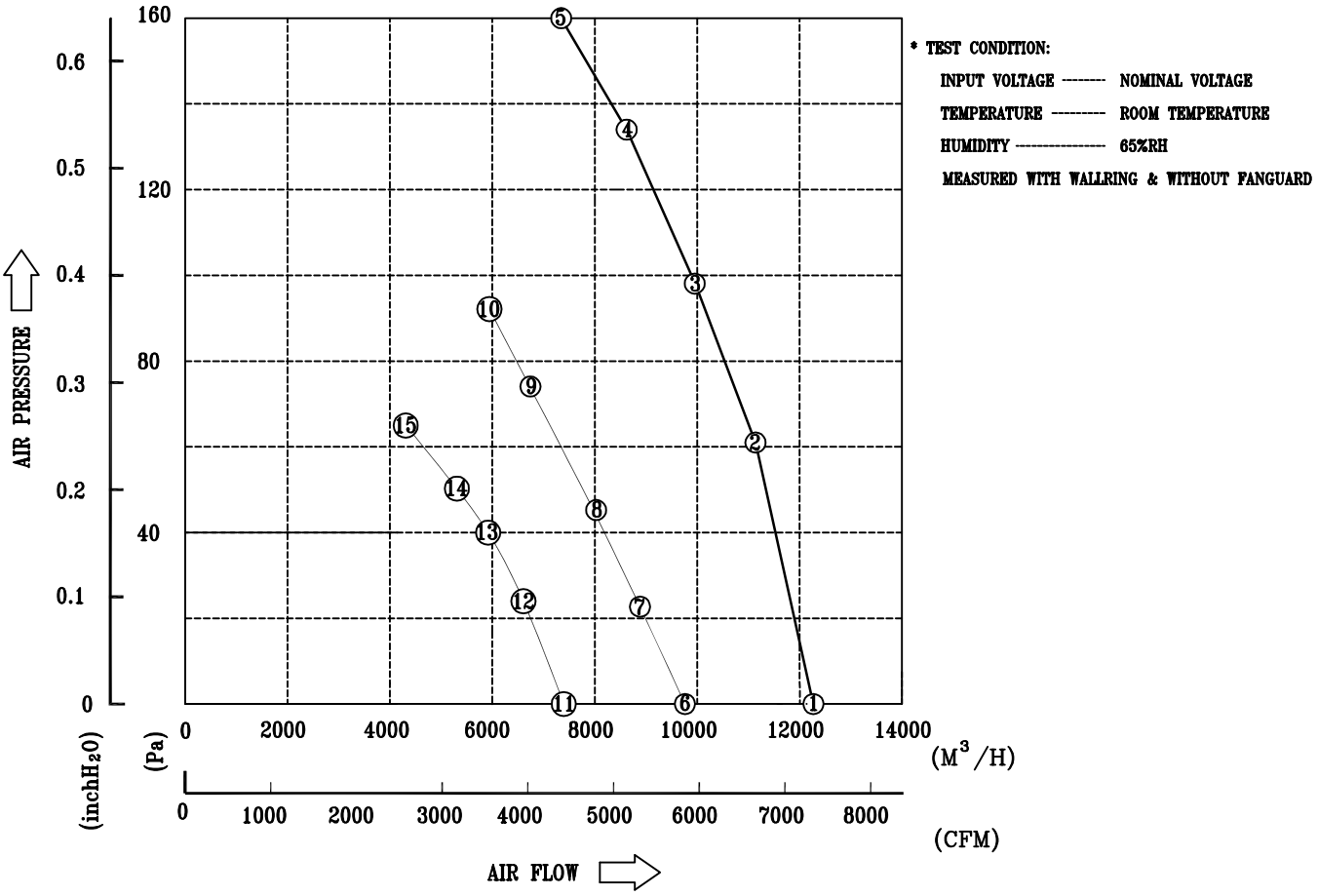
4. P & Q CURVE:



	P	Q	N	P1	I	Lp
	[Pa]	[M³/H]	[R.P.M.]	[W]	[A]	[dB(A)]
1	0	12270	1100	530	2.4	71.5
2	61	11139	1100	667	3..0	
3	98	9965	1100	727	3.2	
4	134	8623	1100	737	3.3	
5	160	7344	1100	777	3.4	
6	0	9761	880	266	1.2	66.5
7	23	8880	880	354	1.6	
8	45	8013	880	356	1.6	
9	74	6728	880	381	1.7	
10	92	5952	880	401	1.8	
11	0	7397	660	110	0.5	60.5
12	25	6624	660	140	0.6	
13	40	5979	660	156	0.7	
14	50	5341	660	184	0.9	
15	65	4311	660	186	0.9	

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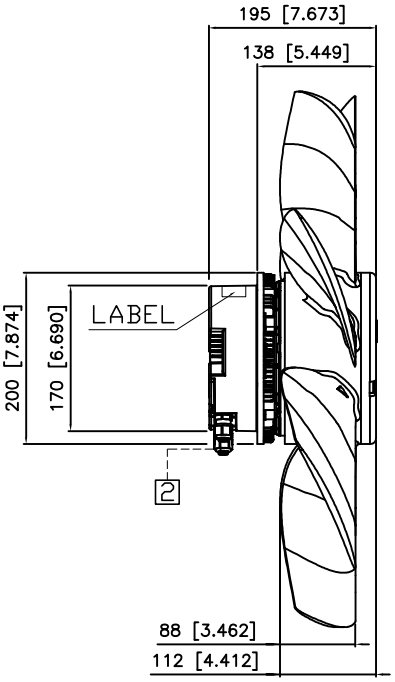
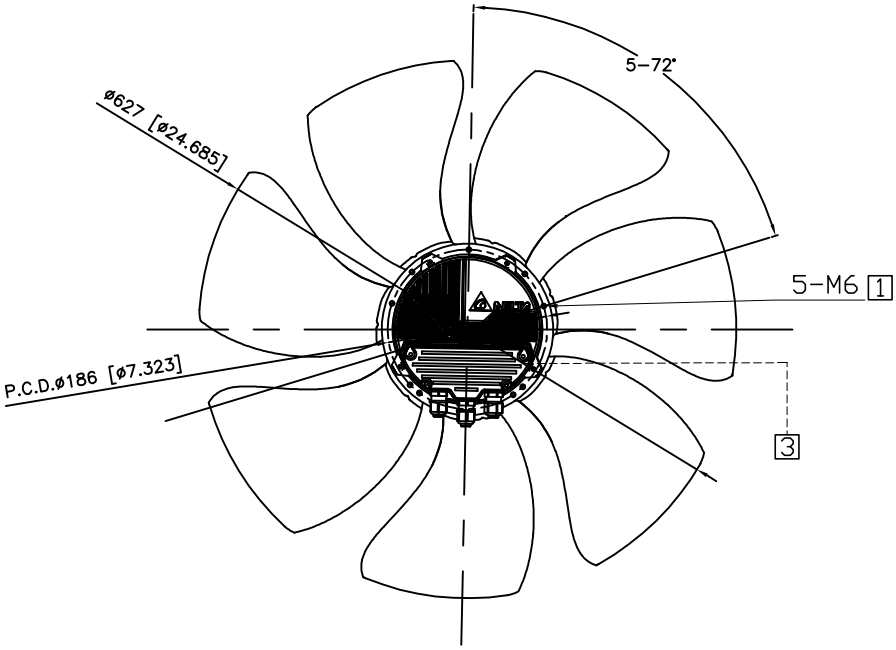
5. DIMENSION DRAWING:

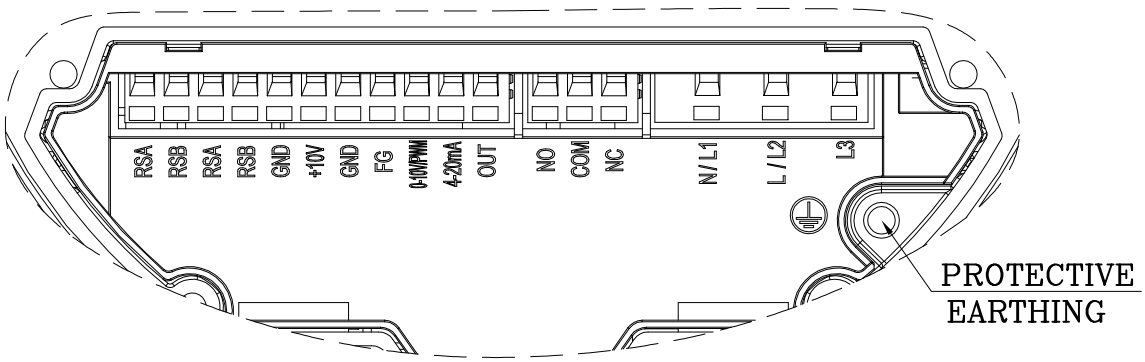
LABEL





1 DEPTH OF SCREW: 8~10mm.
2 CABLE DIAMETER: ø6.6~ø10.0mm.
3 OPEN THE COVER AND REFER TO DEFINITION OF TERMINAL BLOCK.
4 THIS PRODUCT IS RoHS COMPLIANT.

6. DEFINITION OF TERMINAL BLOCK:



TEXT	FUNCTIONS
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)
NO	ALARM RELAY, OPEN BY FAILURE
COM	ALARM RELAY, COMMON(2A/250VAC)
NC	ALARM RELAY, CLOSE BY FAILURE
N/L1	NEUTRAL/AC MAINS
L/L2	LINE/AC MAINS
L3	----------

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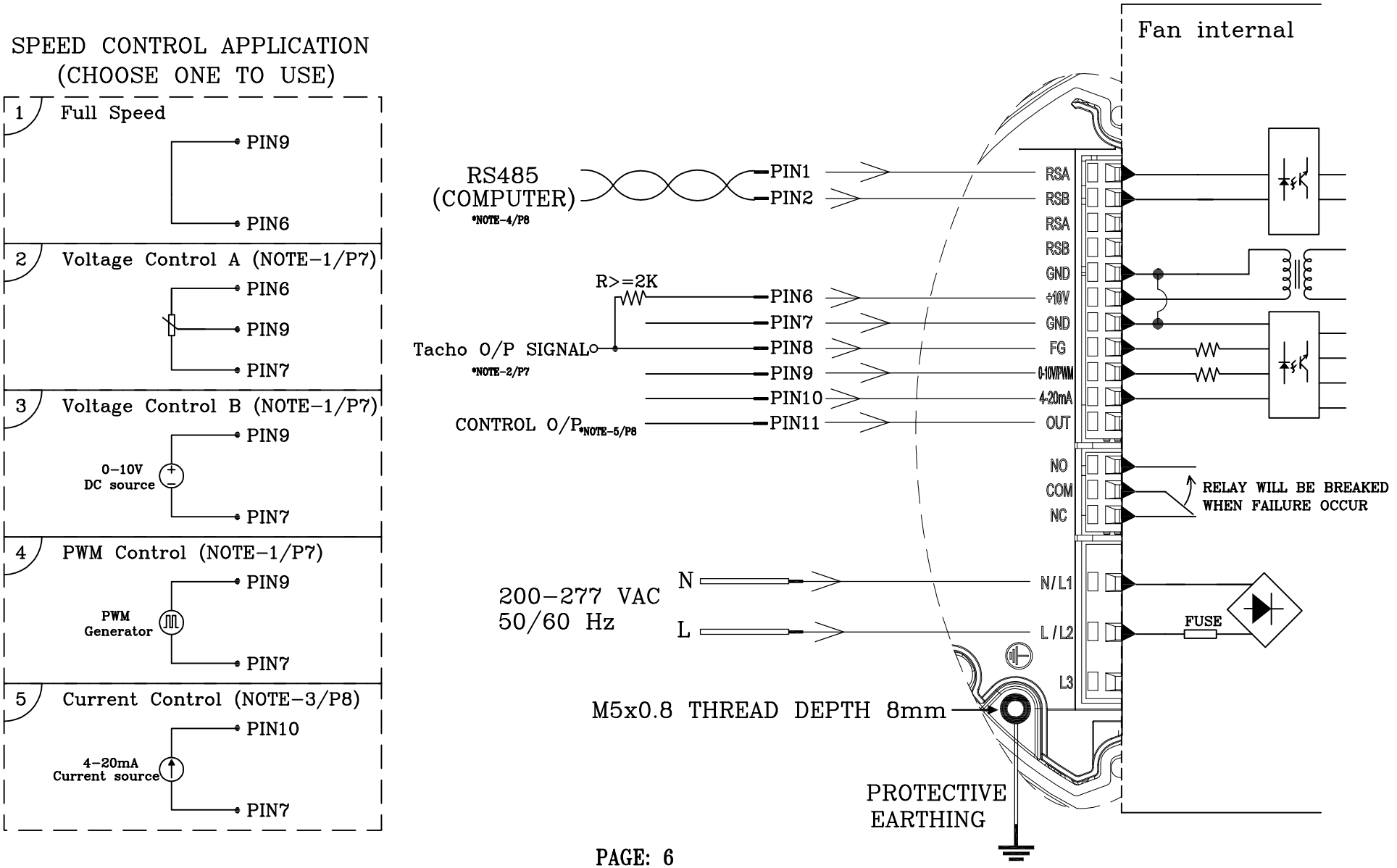
7. LEAD WIRE CONNECTION:



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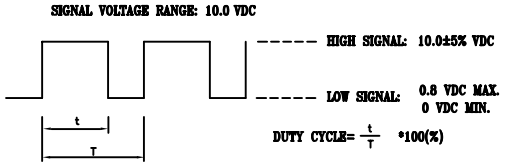
8. SPEED CONTROL SIGNAL: VOLTAGE CONTROL *NOTE-1

- THERE ARE TWO WAYS TO CONTROL SPEED AND MUST OPEN 4-20mA INPUT.
  A. VOLTAGE CONTROL
     - CONTROL VOLTAGE RANGE SHALL BE 0-10 VDC.
     - VOLTAGE AT 10 VDC THE FAN WILL SPIN AT MAXIMUM SPEED.
     - VOLTAGE HIGHER THAN 1.5 VDC, THE FAN WILL START UP.
     - VOLTAGE LOWER THAN 0.5 VDC, THE FAN WILL STOP.
  B. PWM CONTROL
     - THE AMPLITUDE VOLTAGE SHALL BE 10VDC. (100Hz~100kHz)



     - PWM DUTY HIGHER THAN 15 % , THE FAN WILL START UP.
     - PWM DUTY LOWER THAN 5 %, THE FAN WILL STOP.

- THE SPEED COMPARISON WITH CONTROL LEVEL:

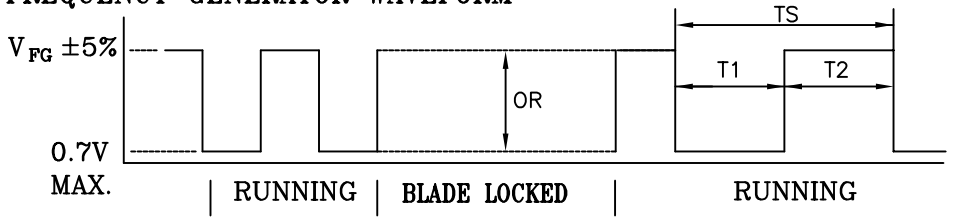
VOLTAGE(V)	PWM DUTY(%)	SPEED (R.P.M.) (REF.)
0.0	0	0
9.5	95	1100

*NOTE-2: FREQUENCY GENERATOR (FG) SIGNAL

V_{CE} (sat)=0.7V MAX. V_{FG}=30.0V MAX.

I_C =5mA MAX. $R \geq V_{FG}/I_C$

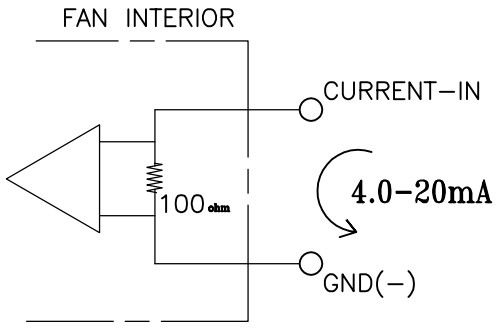
FREQUENCY GENERATOR WAVEFORM



N=R.P.M	1 PULSE PER REVOLUTION
TS=60/N(SEC)	T1=T2=1/2 TS

9. SPEED CONTROL SIGNAL: CURRENT CONTROL *NOTE-3

- SPEED CAN BE CONTROLLED BY CURRENT LEVEL AND MUST OPEN 0-10V/PWM INPUT.
  - CONTROL CURRENT RANGE SHALL BE 4.0-20 mA.
  - CURRENT HIGHER THAN 19.5 mA, THE FAN WILL SPIN AT MAXIMUM SPEED.
  - CURRENT HIGHER THAN 6.0 mA, THE FAN WILL START UP.
  - CURRENT LOWER THAN 4.5 mA OR OPEN LEAD WIRE, THE FAN WILL STOP.



- THE SPEED COMPARISON WITH CONTROL LEVEL:

CURRENT(mA)	SPEED (R.P.M.) (REF.)
4.0	0
19.5	1100

10. FUNCTION CONTROL: RS485 CONTROL

*NOTE-4: 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.

11. CONTROL O/P *NOTE-5

- THIS ANALOG SIGNAL LEVEL IS THE DERIVATIVE OF CURRENT CONTROL LEVEL.
- THE SIGNAL WILL BE 0-10 VDC.

VOLTAGE(V)	PWM DUTY(%)	CURRENT(mA)	CONTROL O/P(VDC) (REF.)
0.0	0	4.0	0.2
1.5	15	6.2	1.47
6.0	60	13.7	5.96
9.0	90	18.7	8.95
10	100	20.0	9.65

12. CONTROL LEVEL & SPEED CURVE:

(REF.)