

DELTA ELECTRONICS, INC.  
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**SPECIFICATION FOR APPROVAL**  
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Customer:

Description:	EC FAN		
Customer P/N:		REV:	
Delta Model NO.:	GTB036FUC21R N1	Safety Model NO.:	GTB036FUC21
Sample Rev:	X03	Issue NO:	
Sample Issue Date:		Quantity:	

1. SCOPE:

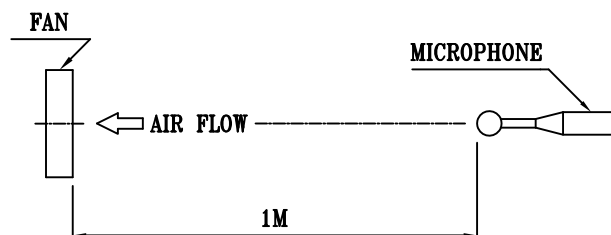
THIS SPECIFICATION DEFINES THE ELECTRICAL AND MECHANICAL CHARACTERISTICS OF THIS CENTRIFUGAL FAN.

2. NOMINAL DATA:

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

ITEM	DESCRIPTION
NOMINAL VOLTAGE	1 $\phi$ 230 VAC 50/60Hz
NOMINAL VOLTAGE RANGE	1 $\phi$ 200 - 277 VAC
INPUT POWER @ FREE-AIR	412 W
INPUT POWER @ MAX. LOAD	510 W
INPUT CURRENT (MAX.)	3.62 A
SPEED	2100 R.P.M.(REF.)
MAX. AIR FLOW (AT ZERO STATIC PRESSURE)	3668 ( MIN. 3301) M/H <sup>3</sup> 2159 ( MIN. 1943) CFM
MAX. AIR PRESSURE (AT ZERO AIR FLOW)	668.80 ( MIN. 541.73) Pa 2.685 ( MIN. 2.175) inchH <sub>2</sub> O
ACOUSTICAL NOISE (AVG.) @ FREE-AIR	77.5 (MAX 82.5) 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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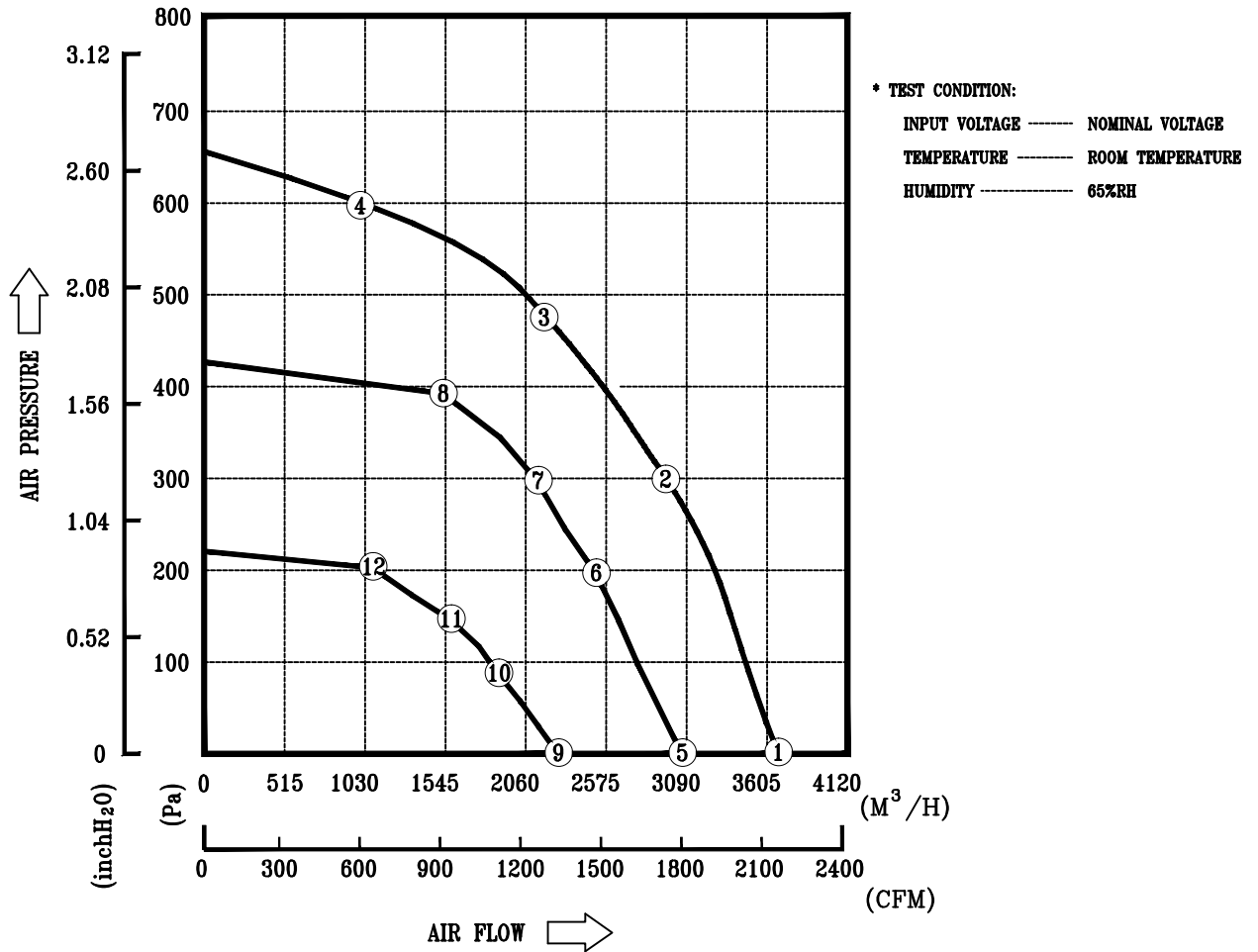
3. FEATURES:

DIRECTION OF ROTATION	CLOCKWISE, SEEN ON ROTOR
BEARING SYSTEM	BALL BEARINGS
WEIGHT	6.5 K.G. (REF.)
MATERIAL OF ELECTRONICS HOUSING	DIE-CAST ALUMINUM
MATERIAL OF IMPELLER	ALUMINUM SHEET
ELECTRICAL LEADS	LEAD WIRE
MOTOR PROTECTION	OVER TEMPERATURE PROTECTED
LEAKAGE CURRENT	$\leq 3.5 \text{ mA}$
INSULATION CLASS	B
TYPE OF PROTECTION	IP54
PROTECTION CLASS	I
POWER FACTOR CORRECTION	PASSTIVE
OPERATING TEMPERATURE	$-25 \sim +60 \text{ }^\circ\text{C}$ (REF.)
STORAGE TEMPERATURE	$-40 \sim +70 \text{ }^\circ\text{C}$ (REF.)
EMC	EN61000-6-1 / EN61000-6-3 / EN61000-3-2/3
SAFETY	UL, cUL & TUV
LIFE EXPECTANCE	* 60,000 HOURS CONTINOUS OPERATION AT $40 \text{ }^\circ\text{C}$ WITH $15 \sim 65 \text{ \%RH}$ .
FUNCTIONS	- CONTROL INPUT 0-10VDC or PWM PATTERN - OUTPUT +10VDC( $\pm 10\%$ ), max. 10mA - RS485 CONTROL BUS - ALARM RELAY, LOCKED ROTOR PROTECTION, SOFT START - VOLTAGE/CURRENT MONITORING

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4. P & Q CURVE:



MEASURED DATA:

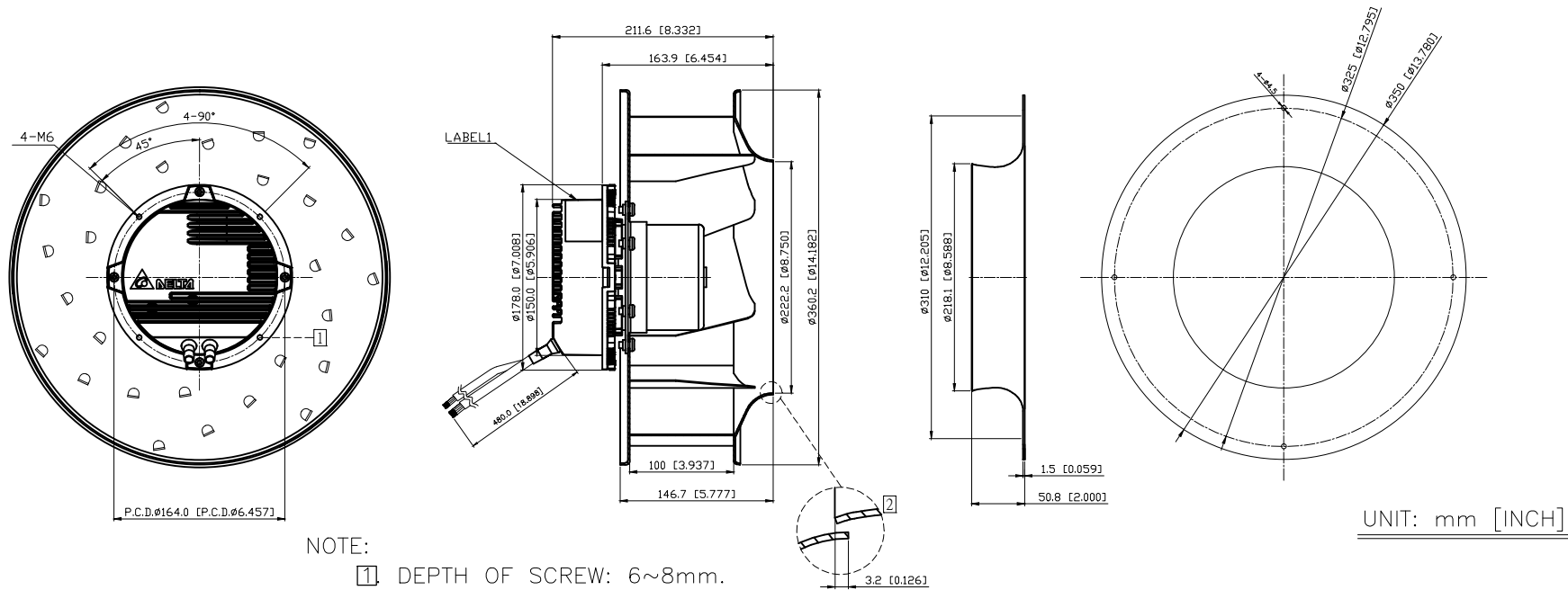
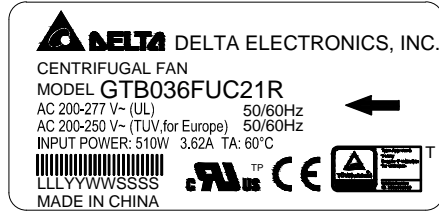
	P	Q	N	P1	I	Lp
	[Pa]	[M³/H]	[R.P.M.]	[W]	[A]	[dB(A)]
1	0	3670	2150	412	2.56	77.5
2	300.1	2982	2130	500	3.11	
3	488.5	2176	2030	505	3.14	
4	585.7	1650	2056	495	3.07	
5	0	3059	1724	223	1.43	73.0
6	195.2	2508	1750	288	1.84	
7	295.3	2135	1741	309	1.98	
8	390.4	1531	1757	307	1.96	
9	0	2278	1260	92	0.67	65.5
10	89.1	1882	1260	110	0.80	
11	147.7	1577	1260	121	0.88	
12	204.0	1077	1260	120	0.87	

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5. DIMENSION DRAWING:

LABEL 1



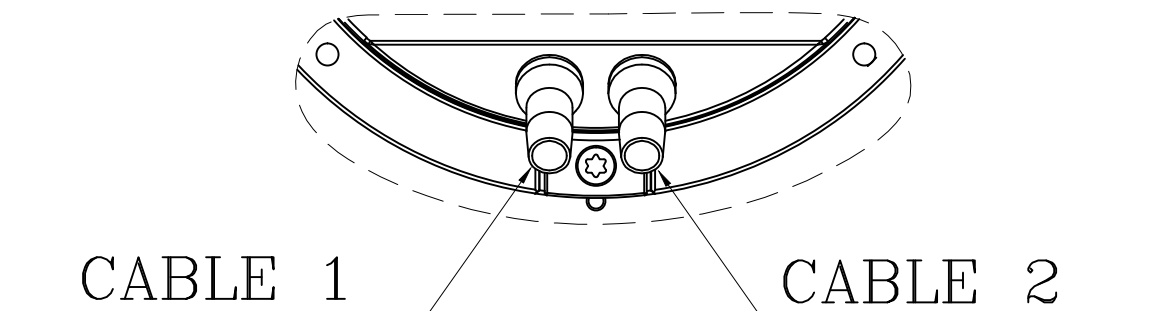
NOTE:

- 1. DEPTH OF SCREW: 6~8mm.
- 2. THIS PRODUCT IS RoHS COMPLIANT.

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6. DEFINITION OF CABLE:

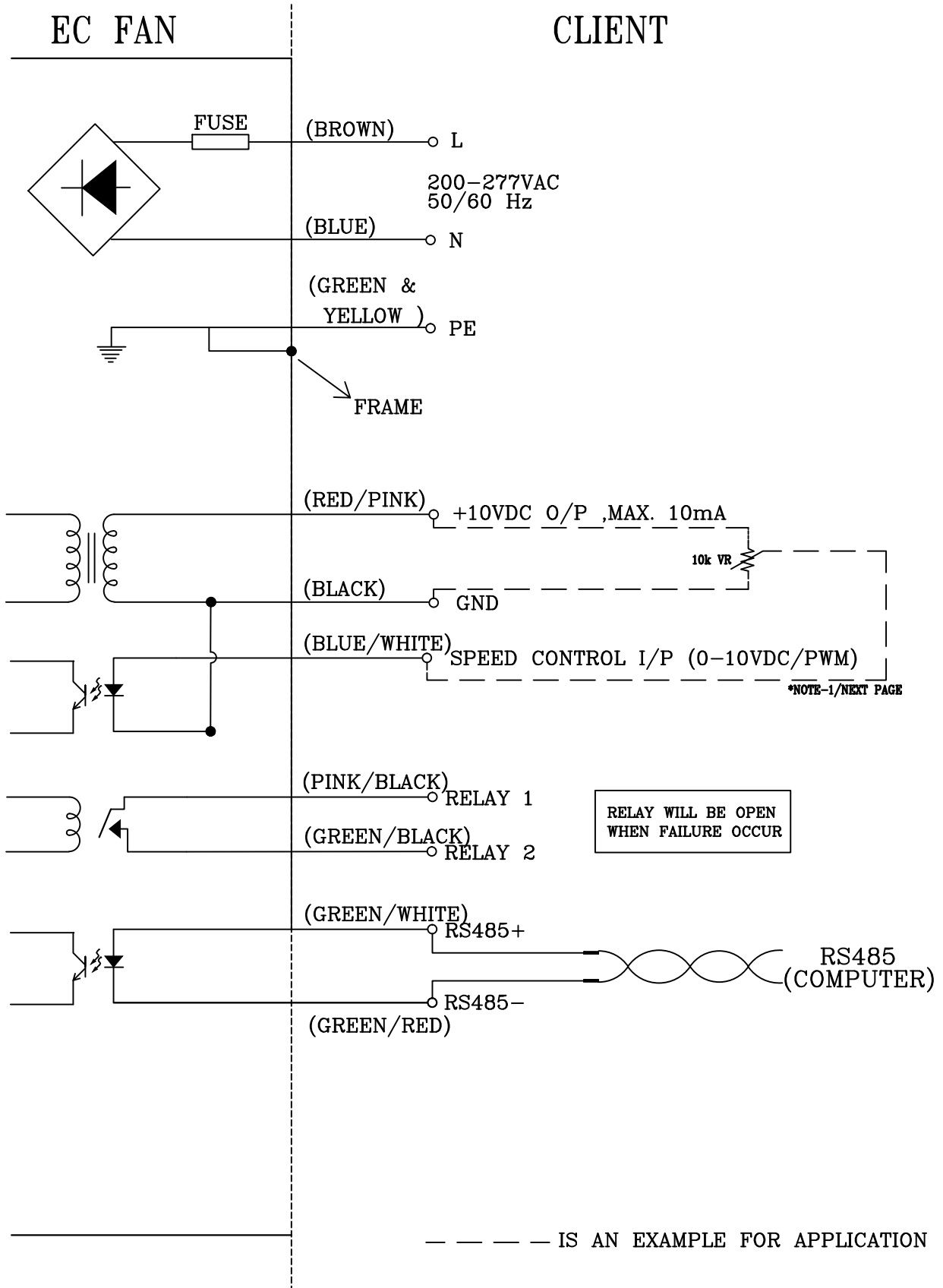


CABLE	COLOR	FUNCTIONS
1	BROWN	L
1	BLUE	N
1	GREEN/YELLOW	EARTH
2	RED/PINK	10V+
2	BLUE/WHITE	PWM
2	BLACK	GND
2	GREEN/RED	RS485-
2	GREEN/WHITE	RS485+
2	PINK/BLACK	RELAY 1
2	GREEN/BLACK	RELAY 2

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7. LEAD WIRE CONNECTION:



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8. FUNCTION CONTROL: VOLTAGE CONTROL

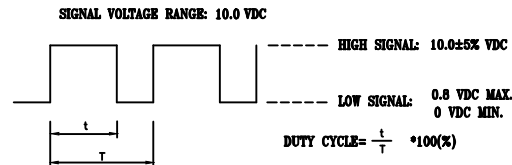
\*NOTE-1: SPEED CONTROL SIGNAL

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	2100

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9. CONTROL LEVEL & SPEED CURVE:

