

SPECIFICATION FOR APPROVAL  
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Customer:

Description:

GT FAN

Customer P/N:

REV:

Delta Model NO.:

GTB028EUB16

Safety Model NO.:

Sample Rev:

X02

Issue NO:

Sample Issue Date:

Quantity:

1. SCOPE:

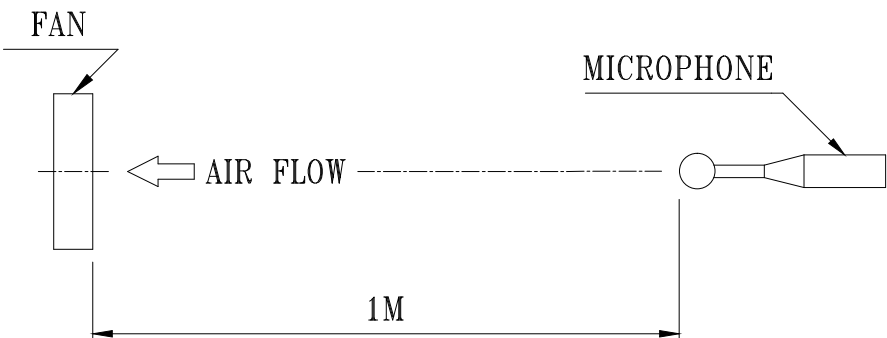
THIS SPECIFICATION DEFINES THE ELECTRICAL AND MECHANICAL CHARACTERISTICS OF THIS CENTRIFUGAL FAN.

2. NOMINAL DATA:

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

| ITEM                                       | DESCRIPTION                                           |
|--------------------------------------------|-------------------------------------------------------|
| NOMINAL VOLTAGE                            | 1ø 230 VAC 50/60Hz                                    |
| NOMINAL VOLTAGE RANGE                      | 1ø 200 – 277 VAC                                      |
| INPUT POWER @ FREE-AIR                     | 170 W                                                 |
| INPUT POWER @ MAX. LOAD                    | 180 W                                                 |
| INPUT CURRENT (MAX)                        | 1.00 A                                                |
| SPEED                                      | 2020 R.P.M. (REF.)                                    |
| MAX. AIR FLOW<br>(AT ZERO STATIC PRESSURE) | 2222 ( MIN. 2000) M³/H<br>1308 ( MIN. 1177) CFM       |
| MAX. AIR PRESSURE<br>(AT ZERO AIR FLOW)    | 569.7 ( MIN. 461.4) Pa<br>2.287 ( MIN. 1.852) inchH₂O |
| ACOUSTICAL NOISE (AVG.) @ FREE-AIR         | 73.0 (MAX 78.0) 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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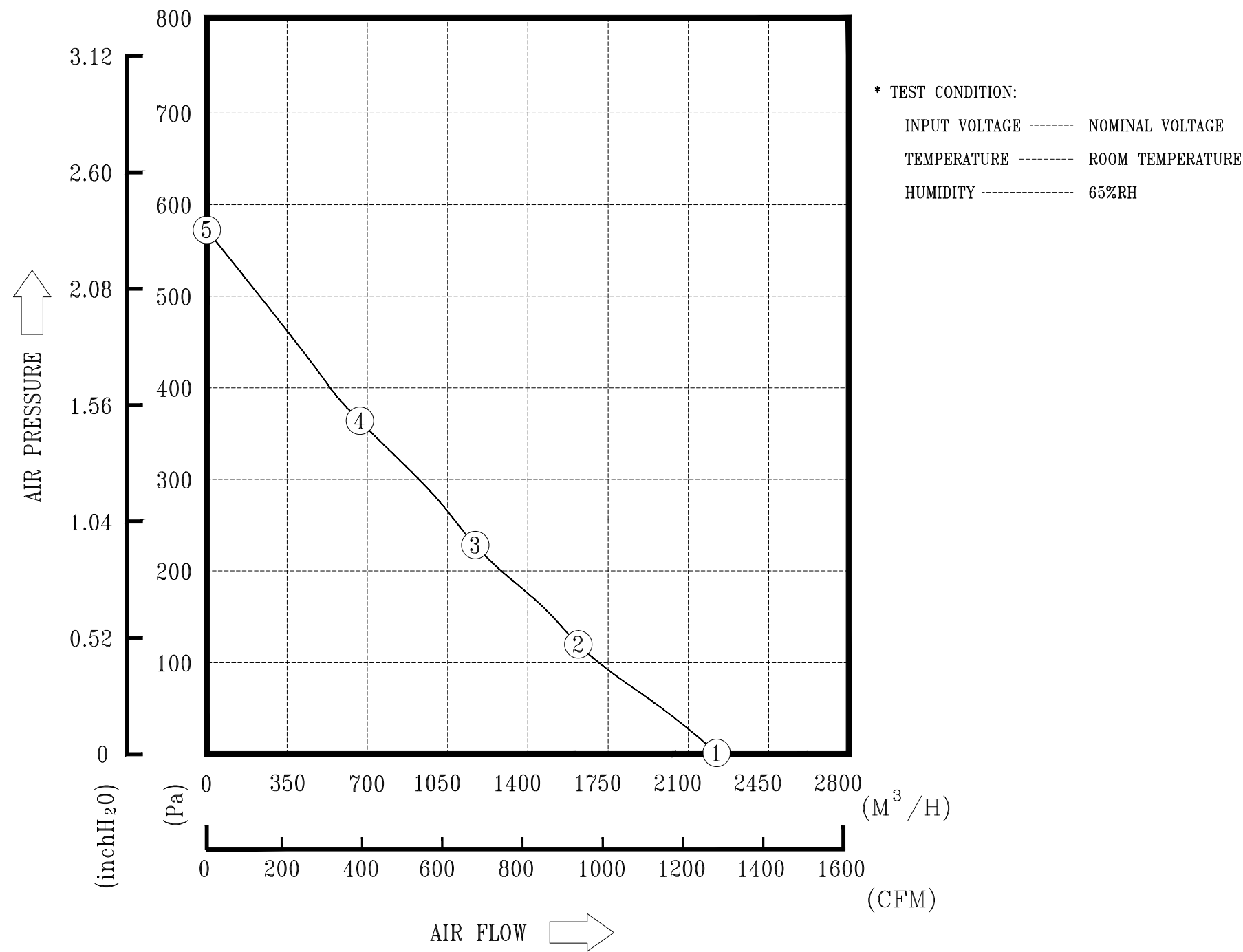
3. FEATURES:

|                                 |                                                                                                          |
|---------------------------------|----------------------------------------------------------------------------------------------------------|
| DIRECTION OF ROTATION           | CLOCKWISE, SEEN ON ROTOR                                                                                 |
| BEARING SYSTEM                  | BALL BEARINGS                                                                                            |
| WEIGHT                          | 2.6 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                 | <= 3.5 mA                                                                                                |
| INSULATION CLASS                | B                                                                                                        |
| TYPE OF PROTECTION              | IP54                                                                                                     |
| PROTECTION CLASS                | I                                                                                                        |
| POWER FACTOR CORRECTION         | ACTIVE                                                                                                   |
| OPERATING TEMPERATURE           | -25~+60 °C (REF.)                                                                                        |
| STORAGE TEMPERATURE             | -40~+70 °C (REF.)                                                                                        |
| EMC                             | EN61000-6-1 , EN61000-6-3 , EN61000-3-2/3                                                                |
| SAFETY                          | UL / TUV                                                                                                 |
| LIFE EXPECTANCE                 | * 60,000 HOURS CONTINOUS OPERATION<br>AT 40 °C WITH 15 ~ 65 %RH.                                         |
| FUNCTIONS                       | - INPUT 0-10VDC/PWM FOR SPEED CONTROL<br>- FAN SPEED SIGNAL OUTPUT<br>- OUTPUT +10VDC(+/-10%), max. 10mA |

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4. P & Q CURVE:



MEASURED DATA:

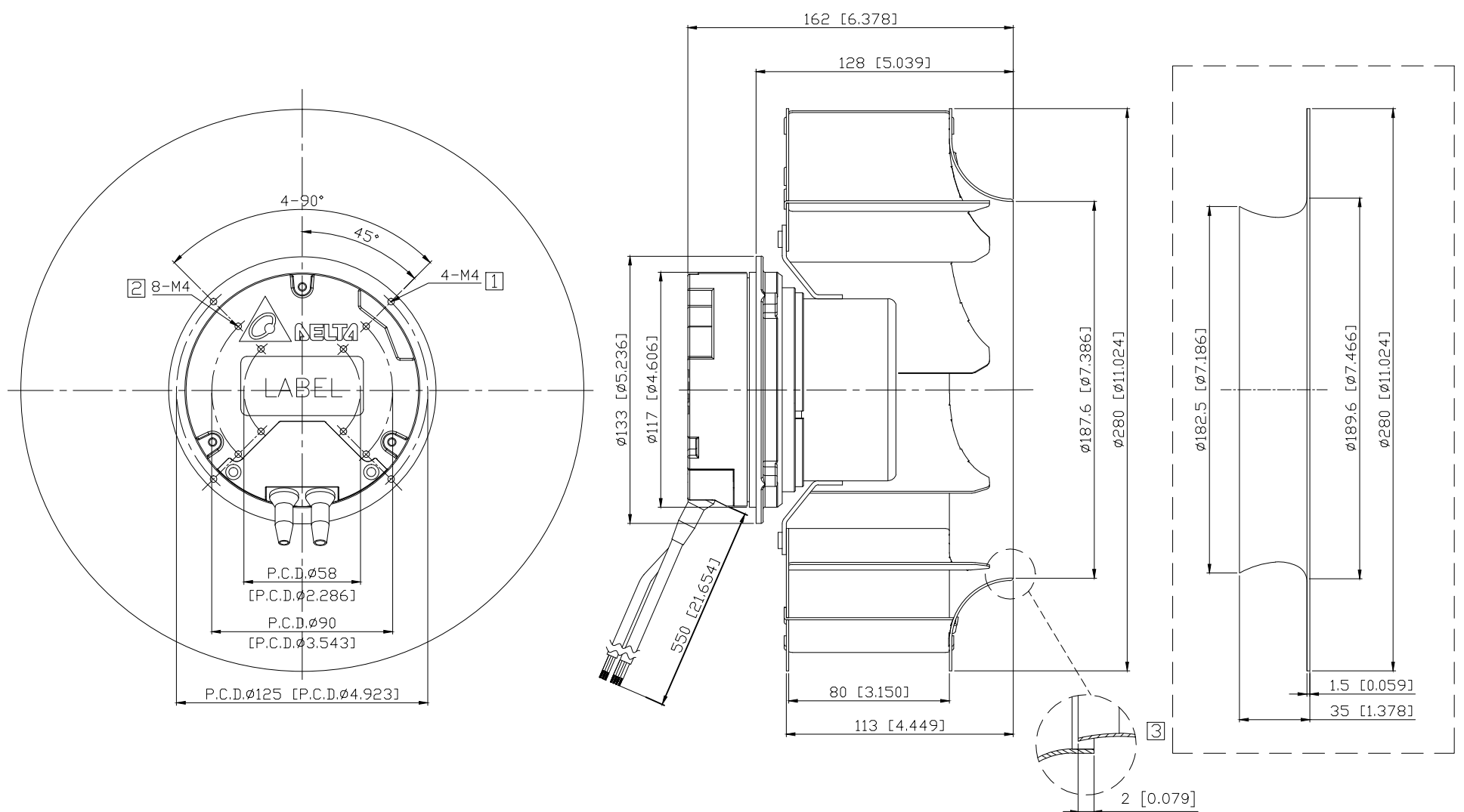
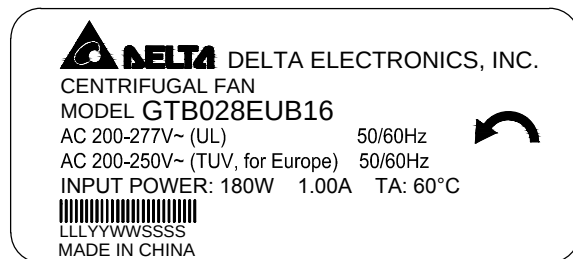
|   | P     | Q      | N        | P1  | I    | Lp      |
|---|-------|--------|----------|-----|------|---------|
|   | [Pa]  | [M³/H] | [R.P.M.] | [W] | [A]  | [dB(A)] |
| 1 | 0     | 2223   | 2010     | 164 | 0.75 | 73.0    |
| 2 | 118.2 | 1607   | 1862     | 165 | 0.76 |         |
| 3 | 235.2 | 1130   | 1822     | 162 | 0.76 |         |
| 4 | 365.5 | 650.5  | 1922     | 164 | 0.75 |         |
| 5 | 569.4 | 0      | 2274     | 110 | 0.54 |         |

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## 5. DIMENSION DRAWING:

LABEL



UNIT: mm [INCH]

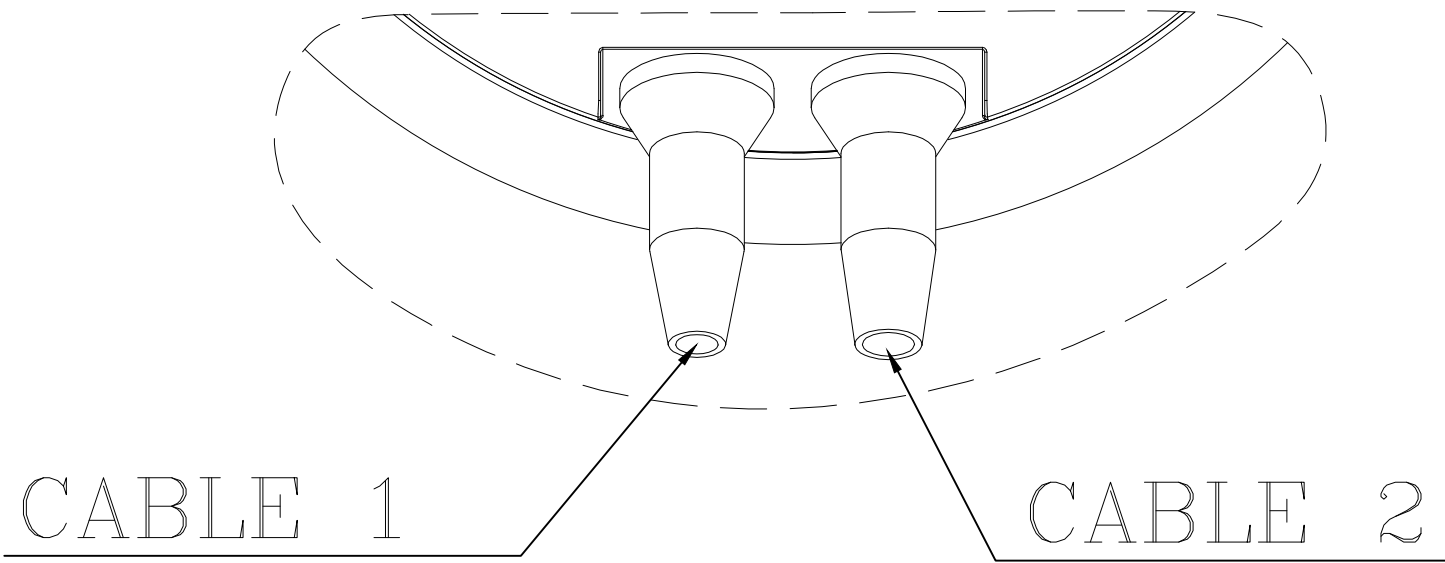
NOTE:

- ① DEPTH OF SCREW: 6~8mm.
- ② DEPTH OF SCREW: 6mm(max.).
- ③ ACCESSORY: INLET NOZZLE, ALL THE PERFORMANCE DATA ARE MEASURED WITH IT.
- ④ THIS PRODUCT IS RoHS COMPLIANT.

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6. DEFINITION OF CABLE:

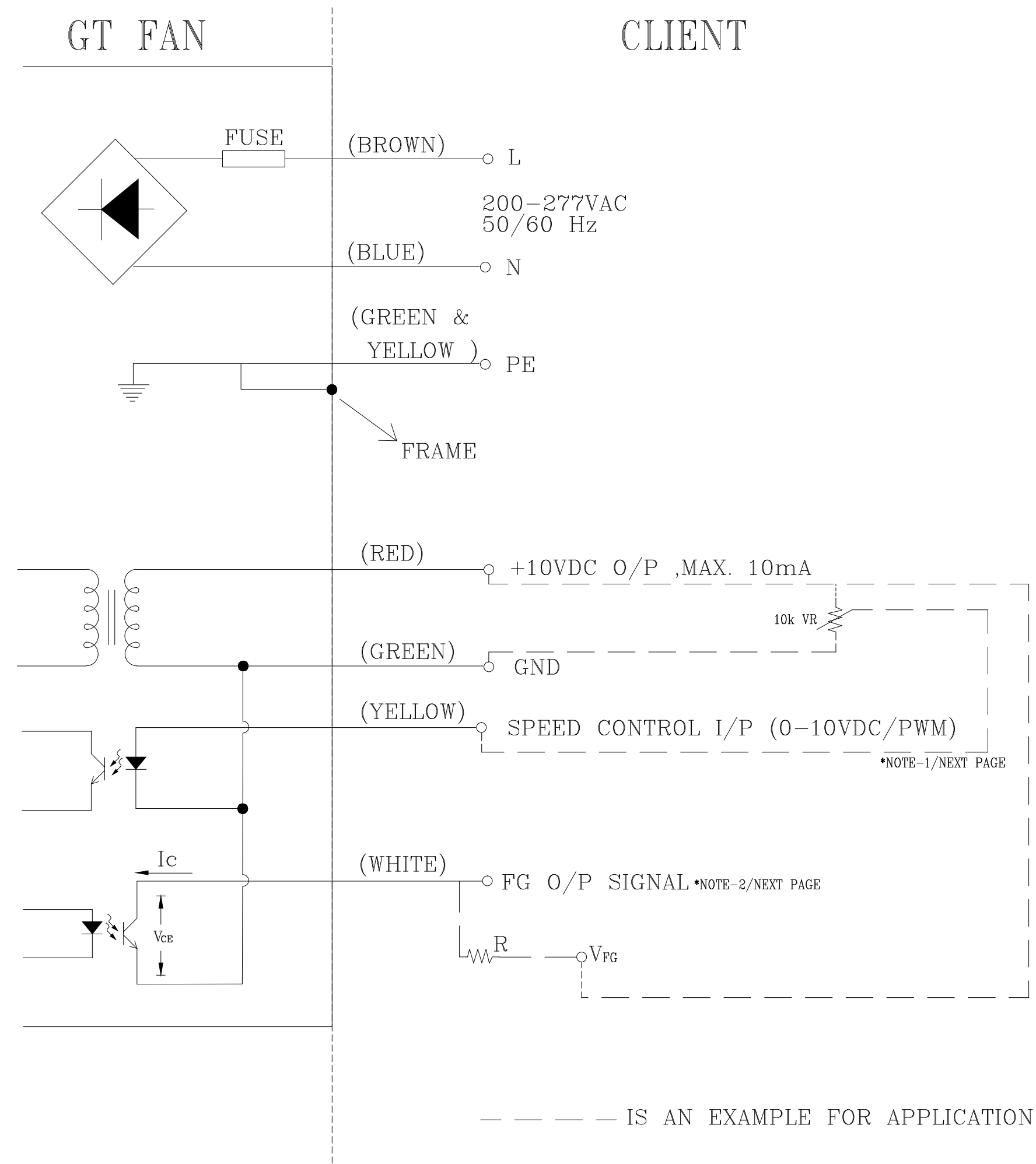


| CABLE | COLOR        | FUNCTIONS |
|-------|--------------|-----------|
| 1     | GREEN        | GND       |
| 1     | RED          | 10V OUT   |
| 1     | WHITE        | F00       |
| 1     | YELLOW       | PWM       |
|       |              |           |
| 2     | BROWN        | L         |
| 2     | BLUE         | N         |
| 2     | GREEN/YELLOW | EARTH     |

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7. LEAD WIRE CONNECTION:





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## 8. FUNCTION CONTROL: VOLTAGE CONTROL

### \*NOTE-1: SPEED CONTROL SIGNAL

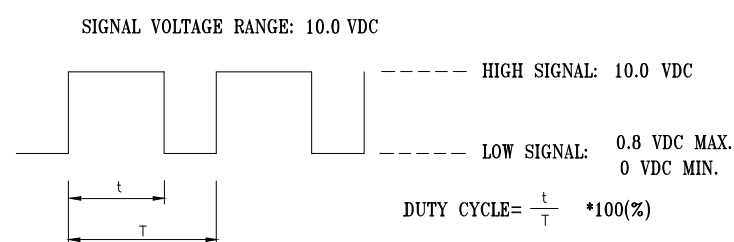
- THERE ARE TWO WAY TO CONTROL FAN SPEED.

#### 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.) <sub>(REF.)</sub> |
|------------|-------------|----------------------------------|
| 0.0        | 0           | 0                                |
| 9.5        | 95%         | 2020                             |

### \*NOTE-2: FREQUENCY GENERATOR (FG) SIGNAL

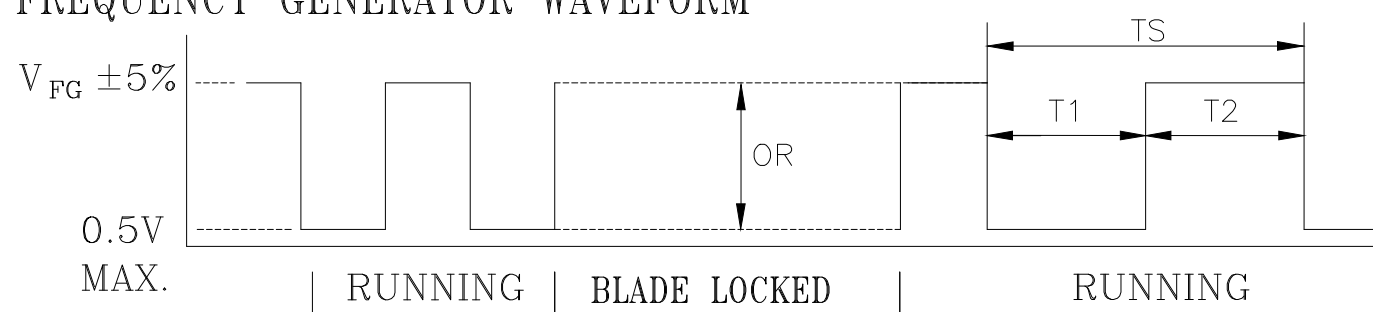
$V_{CE}(\text{sat})=0.7\text{V MAX.}$

$V_{FG}=20.0\text{V MAX.}$

$I_c = 5\text{mA MAX.}$

$R \geq V_{FG}/I_c$

### FREQUENCY GENERATOR WAVEFORM



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

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9. CONTROL LEVEL & SPEED CURVE:

