



Specification For Approval

Customer : _____
Description : _____ EC FAN _____
Customer Part No. : _____ Rev : _____
Delta Model No. : _____ GTB040PUD26R N1 _____ Rev : 04
Safety Model No. : _____ GTB040PUD26 _____
Sample Issue No. : _____
Sample Issue Date : _____ 10/15/2018 _____

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

Approved by : _____

Date : _____

Delta Electronics, Inc.

No.252, Shangying Road, Guishan Industrial Zone,
Taoyuan City, 33341, Taiwan

TEL : +886-3-359-1968

FAX : +886-3-359-1991

*** SAMPLE HISTORY ***

CUSTOMER :

CUSTOMER P/N :

DELTA MODEL : GTB040PUD26R N1

| REV | DESCRIPTION | DRAWN | CHECKED | | APPROVED | ISSUE DATE |
|-----|-----------------------------|-----------------|-----------------|-----------------|-----------------|------------|
| | | | ME | EE | | |
| X03 | ISSUE SPEC. | 邱澣美 05/24'17 | 邱澣美 05/24'17 | 林科亦 05/24'17 | 顏承偉 05/24'17 | 05/24'17 |
| 04 | Modify label from TP to EP. | 鍾明翰 10/15'18 | 鍾明翰 10/15'18 | 林科亦 10/15'18 | 顏承偉 10/15'18 | 10/15'18 |
| | | | | | | |

Electronically Commutated (EC) Fan

Centrifugal Fan

φ 404 x 257 mm



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www.deltaww.com



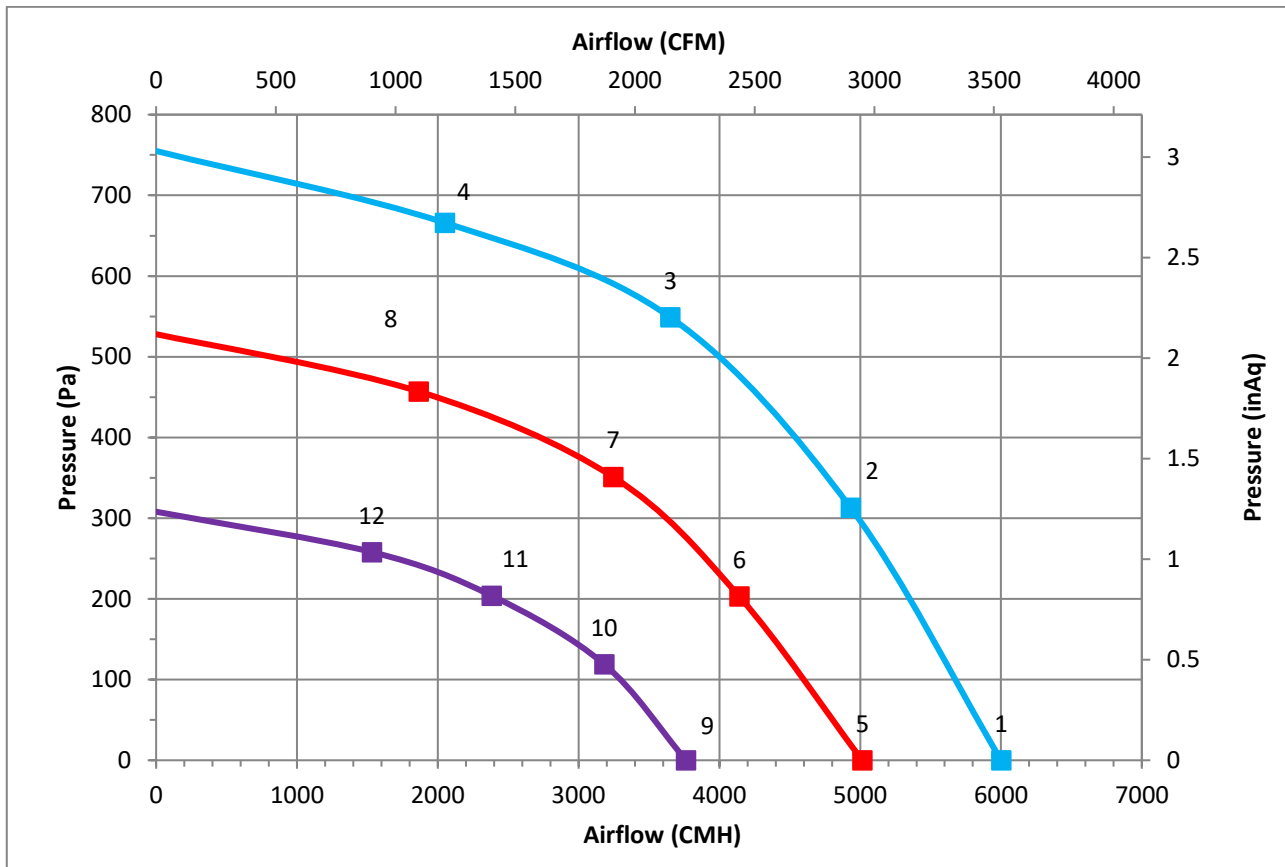
Technical features

| Input Side | |
|---|--------------------|
| Nominal Voltage | 3~ 400Vac 50/60Hz |
| Input Source | 3~ 380Vac - 480Vac |
| Power @ Free air | 640 W |
| Power @ Max. load | 1000 W |
| Output Side | |
| Speed (RPM) | 1850 |
| Qmax. (CMH / CFM) | 6001 / 3532 |
| Pmax. (Pa / inAq) | 755 / 3.03 |
| Noise (dB-A) @ Qmax. | 79.0 |
| Functions | |
| Passive power factor correction | |
| Control input 0-10VDC / PWM / 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. | |

| Physical | |
|-----------------------------|------------------------------------|
| Rotation Direction | CW, Seen on rotor |
| Material (Impeller / Frame) | Aluminum sheet / Die-cast aluminum |
| Bearing system | Ball bearings |
| Weight (kg) | 11.9 |
| Electrical leads | Via terminal block |
| Environmental | |
| Operating temperature range | -25 ~ +60 °C |
| Storage temperature range | -40 ~ +70 °C |
| Safety | |
| Safety | UL; cUL; TUV |
| IP Level | IP54 |
| EMC | EN61000-6-2/3 , EN61000-3-2/3 |
| Protection class | I |
| Insulation class | B |
| 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



Measure data:

| | P [Pa] | Q [CMH] | N [R.P.M.] | P1 [W] | I [A] | Lp [dB(A)] |
|----|-----------|------------|---------------|-----------|----------|---------------|
| 1 | 0 | 6001 | 1850 | 640 | 1.20 | 79.0 |
| 2 | 313 | 4932 | 1852 | 896 | 1.56 | |
| 3 | 549 | 3651 | 1854 | 983 | 1.72 | |
| 4 | 666 | 2051 | 1851 | 816 | 1.48 | |
| 5 | 0 | 5012 | 1545 | 371 | 0.74 | 75.5 |
| 6 | 203 | 4139 | 1550 | 529 | 1.02 | |
| 7 | 351 | 3245 | 1548 | 579 | 1.10 | |
| 8 | 457 | 1864 | 1552 | 512 | 1.00 | |
| 9 | 0 | 3763 | 1186 | 184 | 0.39 | 70.0 |
| 10 | 119 | 3182 | 1188 | 243 | 0.50 | |
| 11 | 204 | 2382 | 1182 | 263 | 0.54 | |
| 12 | 258 | 1532 | 1188 | 246 | 0.51 | |

Test Condition :

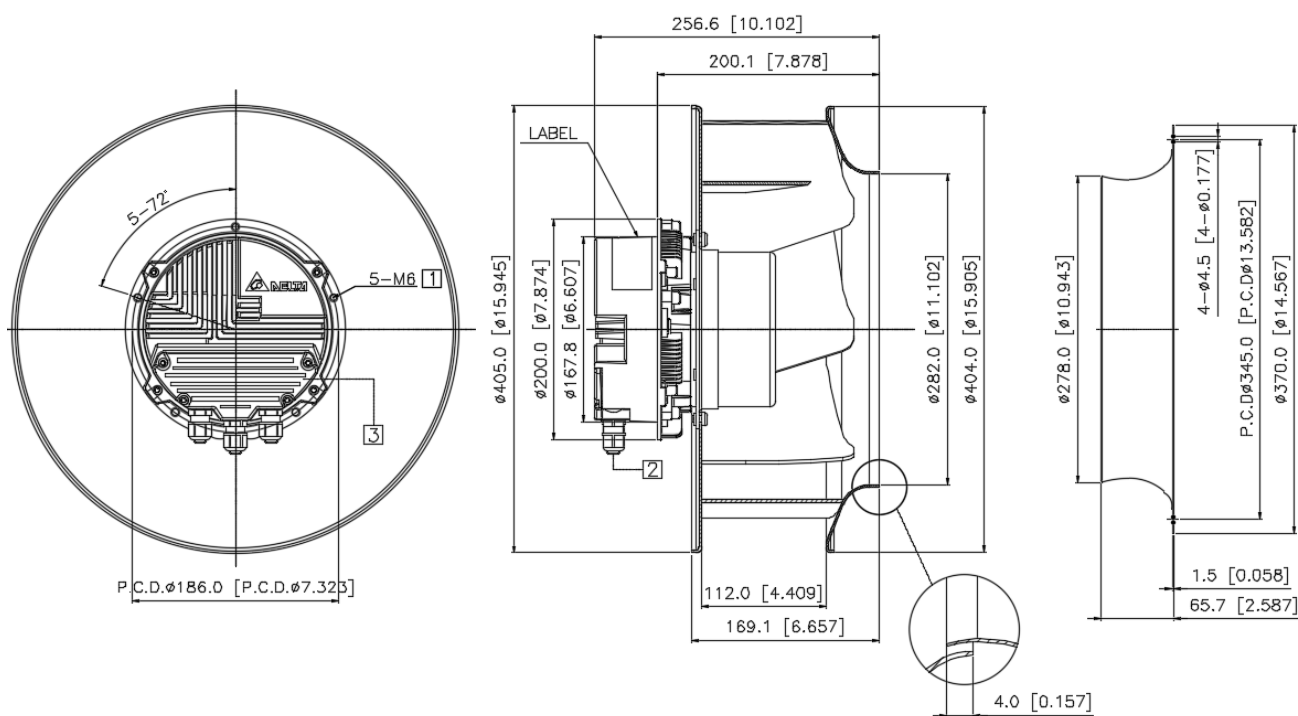
- Input Voltage: Nominal Voltage
- Temperature : Room Temperature
- Humidity : 65%RH
- Measured with inlet cone.
- Noise (Lp) is measured at a distance of one meter from the inlet side.

Dimension drawing

Label :



Fan :

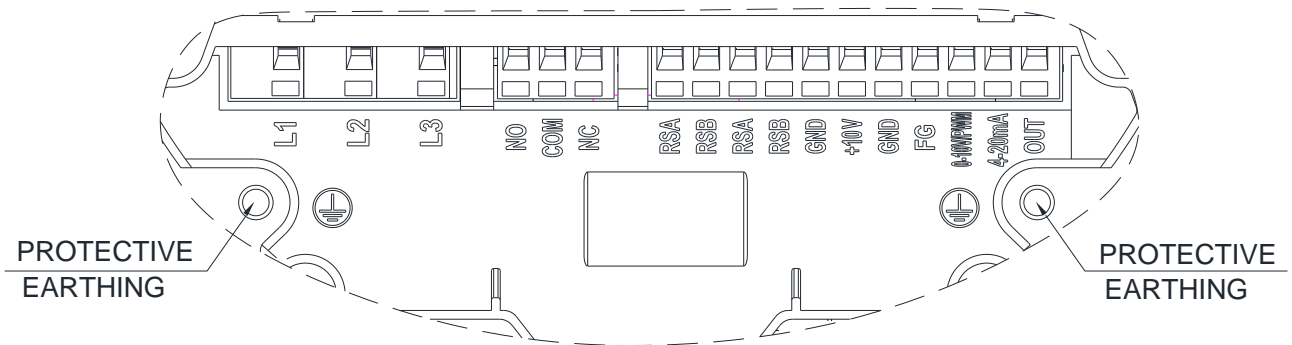


Note :

1. Depth of screw : 12 ~16 mm.
2. Cable Diameter : $\phi 6.0$ ~ $\phi 10.0$ mm
3. Open the cover and refer to definition of terminal block.

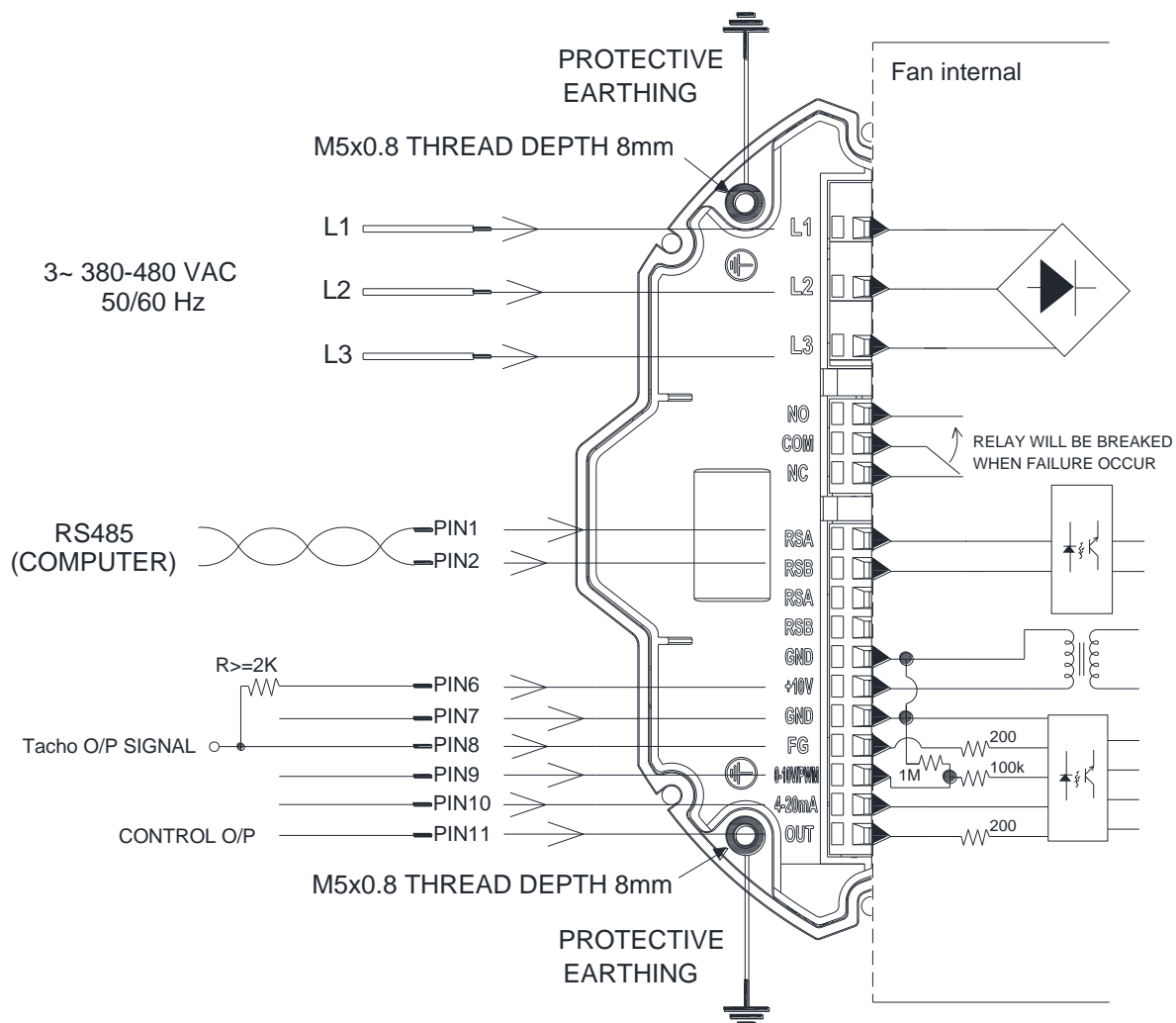
UNIT : mm[INCH]

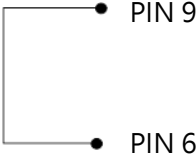
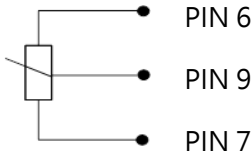
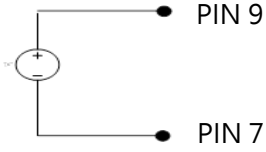
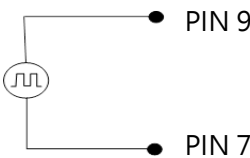
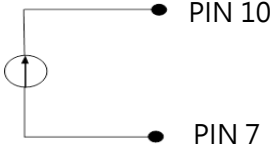
Definition of terminal block

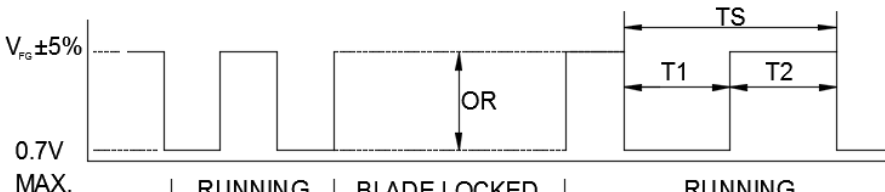


| | Text | Functions |
|--------|-----------|--|
| Power | L1 | AC main (3~ 380-480VAC) |
| | L2 | AC main (3~ 380-480VAC) |
| | L3 | AC main (3~ 380-480VAC) |
| Status | NO | Alarm relay, open by failure |
| | COM | Alarm relay, common (2A/250VAC) |
| | NC | Alarm relay, close by failure |
| Signal | 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) |

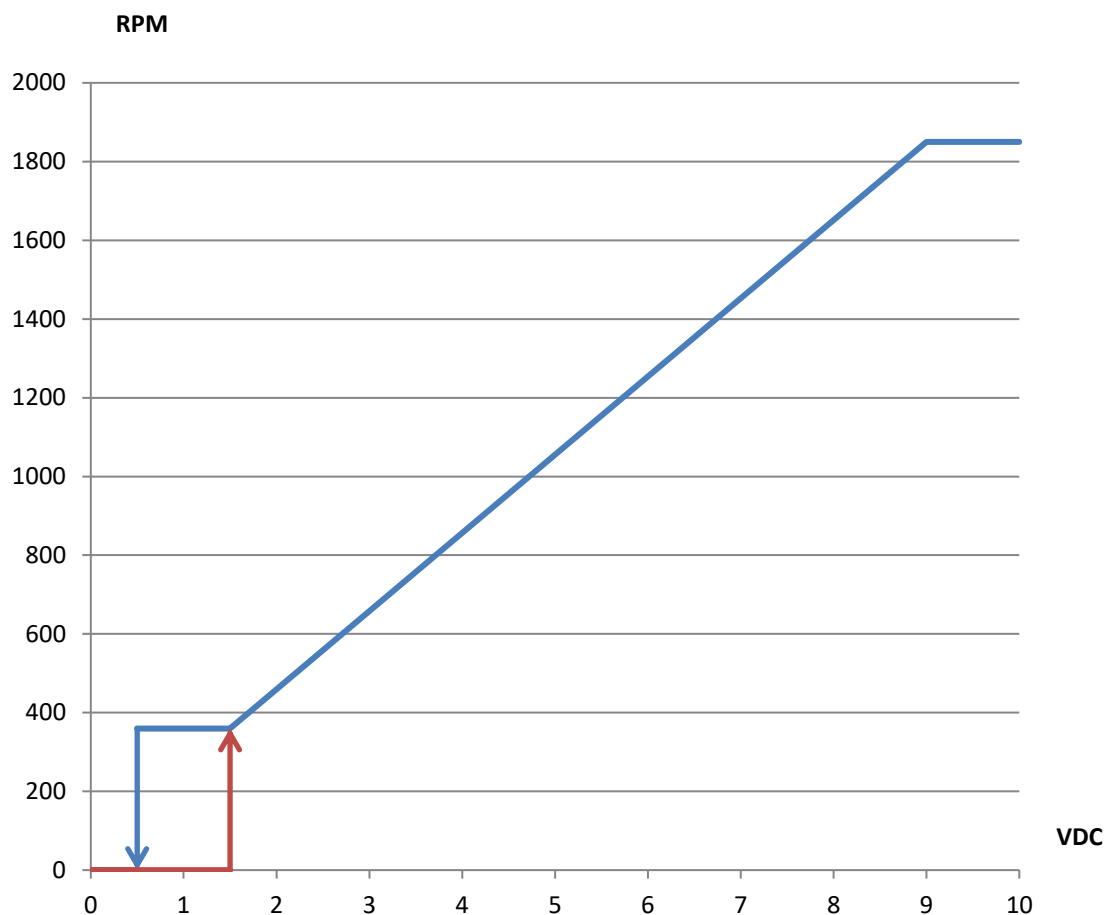
Lead wire connection:



| Speed setting | |
|--|--|
| <p>Full Speed</p>  | <p>Short PIN6 & PIN9 Fan will run full speed.</p> |
| <p>Voltage Control A</p>  | <p>Connector 1-10kΩ variable resistor Between +10VDC with GND and 0-10V/PWM Turn the variable resistor · can change the '0-10V/PWM' voltage (0...10V) °</p> |
| <p>Voltage Control B</p> <p>0-10V DC Source</p>  | <p>Use voltage source support 0~10VDC voltage DC+ : connector PIN9(+) DC - : connector PIN7(-)</p> |
| <p>PWM Control</p> <p>PWM Generator</p>  | <p>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 °</p> |
| <p>Current Control</p> <p>4-20mA Current Source</p>  | <p>4~20mA Current Control Open 0-10V/PWM PIN - Lower than 4.8 mA → Fan Stop - Higher than 5.6 mA → Fan Start up - Higher than 19.5 mA → Maximum Speed</p> |

| Signal function | | | | | | | | | | | | | | | | |
|------------------------|---|-------------------|-------------------------|-------------------|---|-----|------------|------|----------|------------|----------|----|----------|-----|----|----------|
| RS485 control function | <p>RS485 control function</p> <ul style="list-style-type: none"> -Select the control mode of speed, fixed speed or fixed PWM duty -Speed and power consumption feedback. -Allow multiple FANs control and status patrol. | | | | | | | | | | | | | | | |
| Control O/P | <p>The analog signal level is the derivative of current control level.</p> <table border="1"> <thead> <tr> <th>Current (mA)</th> <th>Control O/P (VDC) (REF)</th> </tr> </thead> <tbody> <tr> <td>4.0</td> <td>0</td> </tr> <tr> <td>6.3</td> <td>1.54</td> </tr> <tr> <td>14.0</td> <td>6.15</td> </tr> <tr> <td>19.5</td> <td>9.33</td> </tr> </tbody> </table> | Current (mA) | Control O/P (VDC) (REF) | 4.0 | 0 | 6.3 | 1.54 | 14.0 | 6.15 | 19.5 | 9.33 | | | | | |
| Current (mA) | Control O/P (VDC) (REF) | | | | | | | | | | | | | | | |
| 4.0 | 0 | | | | | | | | | | | | | | | |
| 6.3 | 1.54 | | | | | | | | | | | | | | | |
| 14.0 | 6.15 | | | | | | | | | | | | | | | |
| 19.5 | 9.33 | | | | | | | | | | | | | | | |
| Voltage/PWM control | <p>The speed comparison will control level</p> <table border="1"> <thead> <tr> <th>Voltage (V)</th> <th>PWM (%)</th> <th>Speed (RPM) (REF)</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>1.5</td> <td>15</td> <td>360 ±50RPM</td> </tr> <tr> <td>6.0</td> <td>60</td> <td>1240 ±8%</td> </tr> <tr> <td>9.5</td> <td>95</td> <td>1850 ±5%</td> </tr> </tbody> </table> | Voltage (V) | PWM (%) | Speed (RPM) (REF) | 0 | 0 | 0 | 1.5 | 15 | 360 ±50RPM | 6.0 | 60 | 1240 ±8% | 9.5 | 95 | 1850 ±5% |
| Voltage (V) | PWM (%) | Speed (RPM) (REF) | | | | | | | | | | | | | | |
| 0 | 0 | 0 | | | | | | | | | | | | | | |
| 1.5 | 15 | 360 ±50RPM | | | | | | | | | | | | | | |
| 6.0 | 60 | 1240 ±8% | | | | | | | | | | | | | | |
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| Current control | <p>The speed comparison will control level</p> <table border="1"> <thead> <tr> <th>Current (mA)</th> <th>Speed (RPM) (REF)</th> </tr> </thead> <tbody> <tr> <td>4.0</td> <td>0</td> </tr> <tr> <td>6.3</td> <td>370 ±50RPM</td> </tr> <tr> <td>14.0</td> <td>1260 ±8%</td> </tr> <tr> <td>19.5</td> <td>1850 ±5%</td> </tr> </tbody> </table> | Current (mA) | Speed (RPM) (REF) | 4.0 | 0 | 6.3 | 370 ±50RPM | 14.0 | 1260 ±8% | 19.5 | 1850 ±5% | | | | | |
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| 4.0 | 0 | | | | | | | | | | | | | | | |
| 6.3 | 370 ±50RPM | | | | | | | | | | | | | | | |
| 14.0 | 1260 ±8% | | | | | | | | | | | | | | | |
| 19.5 | 1850 ±5% | | | | | | | | | | | | | | | |
| Alarm state | <p>NO and COM will OPEN ; NC and COM will CLOSE.</p> | | | | | | | | | | | | | | | |
| FG | <p> $V_{CE(sat)} = 0.7V \text{ MAX.}$ $V_{FG} = 30.0V \text{ MAX.}$ $I_C = 5mA \text{ MAX.}$ $R \geq V_{FG} / I_C$ </p> <p>Frequency generator waveform</p>  <p> $N=R.P.M$ 1 PULSE PER REVOLUTION $TS=60/N(\text{SEC})$ $T1=T2=1/2 \text{ TS}$ </p> | | | | | | | | | | | | | | | |

Control Voltage VS. RPM Curve



Voltage(VDC) , PWM duty (%), 4~20mA 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 | % |
| 4~20 mA | 4 | 5 | 5.6 | 6 | 7.2 | 8.8 | 10.4 | 12 | 13.6 | 15.2 | 16.8 | 19 | 20 | mA |