

CUI DEVICES

SERIES: CFM-80CF | DESCRIPTION: DC AXIAL FAN

FEATURES

- omniCOOL™ bearing system
- 80 x 80 mm frame
- multiple speed options
- tachometer signal available



MODEL

| MODEL | input voltage | input current ¹ | input power ¹ | rated speed ¹ | airflow ² | static pressure ³ | noise ⁴ | |
|--------------------|---------------|----------------------------|--------------------------|--------------------------|----------------------|------------------------------|-------------------------|-----------|
| | rated (Vdc) | range (Vdc) | max (A) | max (W) | typ (RPM±10%) | (CFM) | (inch H ₂ O) | typ (dBA) |
| CFM-8015CF-120-213 | 12 | 10.8~13.2 | 0.09 | 1.08 | 2,000 ⁵ | 23.23 | 0.04 | 21.3 |
| CFM-8015CF-130-301 | 12 | 10.8~13.2 | 0.26 | 3.12 | 3,000 ⁵ | 34.85 | 0.10 | 30.1 |
| CFM-8015CF-140-363 | 12 | 10.8~13.2 | 0.51 | 6.12 | 3,800 | 43.49 | 0.16 | 35.2 |
| CFM-8015CF-220-213 | 24 | 21.6~26.4 | 0.06 | 1.44 | 2,000 ⁵ | 23.23 | 0.04 | 21.3 |
| CFM-8015CF-230-301 | 24 | 21.6~26.4 | 0.21 | 5.04 | 3,000 | 34.85 | 0.10 | 30.1 |
| CFM-8015CF-240-363 | 24 | 21.6~26.4 | 0.21 | 5.04 | 3,800 | 43.49 | 0.16 | 35.2 |
| CFM-8020CF-125-273 | 12 | 10.8~13.2 | 0.08 | 0.96 | 2,500 ⁵ | 24.52 | 0.07 | 27.4 |
| CFM-8020CF-135-346 | 12 | 10.8~13.2 | 0.15 | 1.80 | 3,500 | 34.33 | 0.14 | 34.7 |
| CFM-8020CF-145-401 | 12 | 10.8~13.2 | 0.30 | 3.60 | 4,500 | 44.14 | 0.24 | 40.2 |
| CFM-8020CF-225-273 | 24 | 21.6~26.4 | 0.05 | 1.20 | 2,500 ⁵ | 24.52 | 0.07 | 27.4 |
| CFM-8020CF-235-346 | 24 | 21.6~26.4 | 0.09 | 2.16 | 3,500 | 34.33 | 0.14 | 34.0 |
| CFM-8020CF-245-401 | 24 | 21.6~26.4 | 0.18 | 4.32 | 4,500 | 44.14 | 0.24 | 40.2 |

Notes:

1. At rated voltage, after 3 minutes.
2. At rated voltage, room temperature, 65% humidity, 0 inch H₂O static pressure.
3. At rated voltage, 0 CFM airflow.
4. Measured in an anechoic chamber as per ISO3745/GB4214-84 at rated voltage, with background noise 20±2 dBA at 1 m from the fan intake.
5. Typical rated speed is measured as RPM±350 at rated voltage.
6. All specifications are measured at 25°C, 65% relative humidity unless otherwise specified.

PART NUMBER KEY

CFM-8015CF-120-213- XX - CXX

Base Number

Fan Signals
"blank" = no signals
20 = tachometer signal

Reserved for Custom Configurations

INPUT

| parameter | conditions/description | min | typ | max | units |
|--------------------------------------|--|--------------|----------|--------------|------------|
| operating input voltage ⁷ | 12 Vdc input models 24 Vdc input models | 10.8 21.6 | 12 24 | 13.2 26.4 | Vdc Vdc |
| starting voltage | 12 Vdc input models 24 Vdc input models (CFM-8020CF-225-273 & CFM-8020CF-235-346: 12 Vdc) | | 7 14 | | Vdc Vdc |

Note: 7. See Model section on page 1 for specific input voltage ranges.

PERFORMANCE⁸

| parameter | conditions/description | min | typ | max | units |
|-----------------|--|-------|-----|-------|-----------------------|
| rated speed | at rated voltage, 25°C, after 3 minutes | 2,000 | | 4,500 | RPM |
| air flow | at 0 inch H ₂ O, see performance curves | 23.23 | | 44.14 | CFM |
| static pressure | at 0 CFM, see performance curves | 0.04 | | 0.24 | inch H ₂ O |
| noise | at 1 m, rated speed | 21.3 | | 40.2 | dBA |

Note: 8. See Model section on page 1 for specific values.

PROTECTIONS / FEATURES⁹

| parameter | conditions/description | min | typ | max | units |
|---------------------|--------------------------|-----|-----|-----|-------|
| auto restart | on all models | | | | |
| polarity protection | on all models | | | | |
| tachometer signal | available on "20" models | | | | |

Notes: 9. See Application Notes for details.

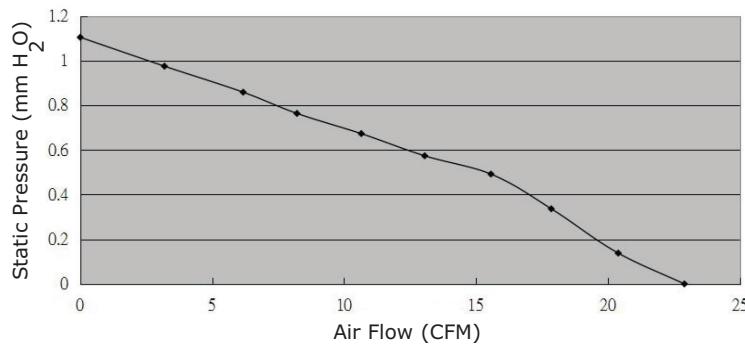
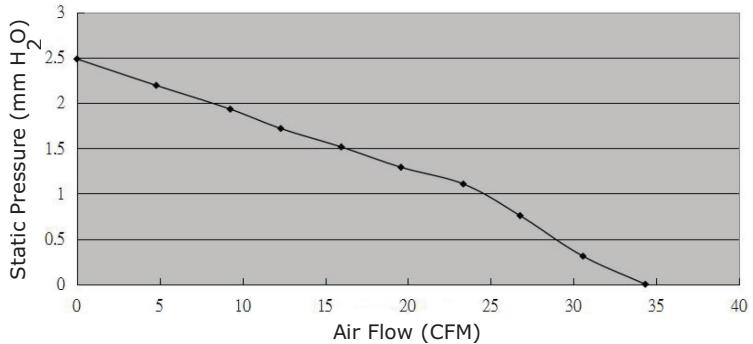
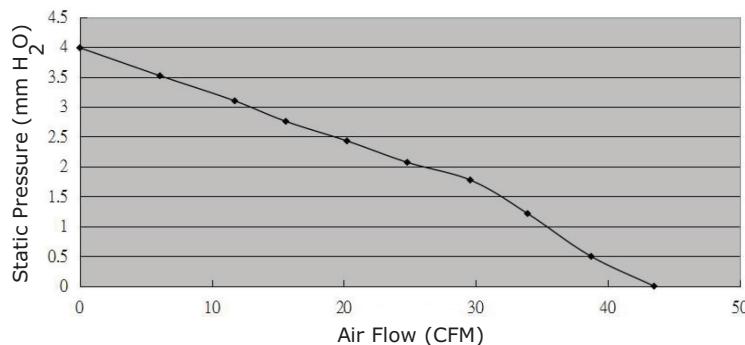
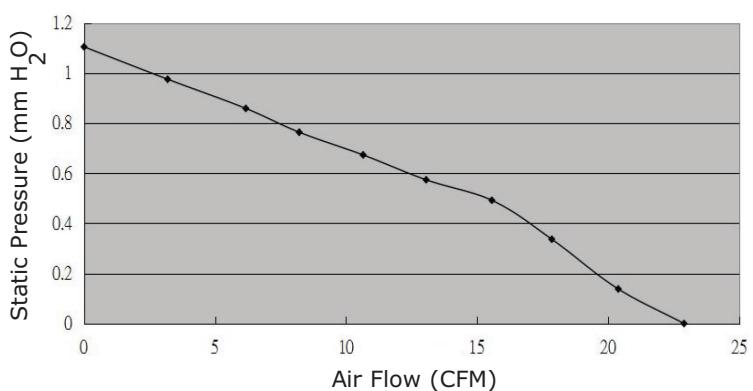
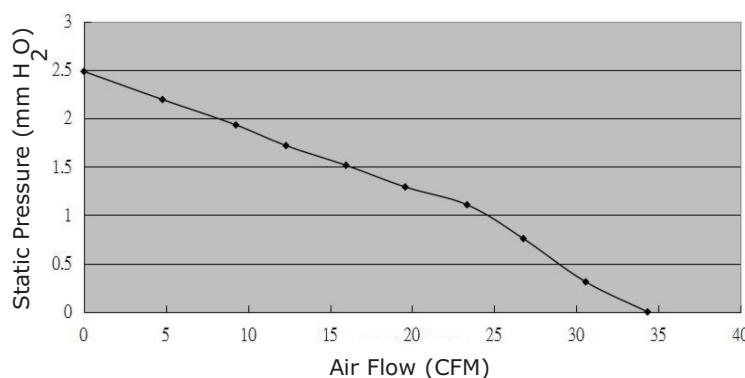
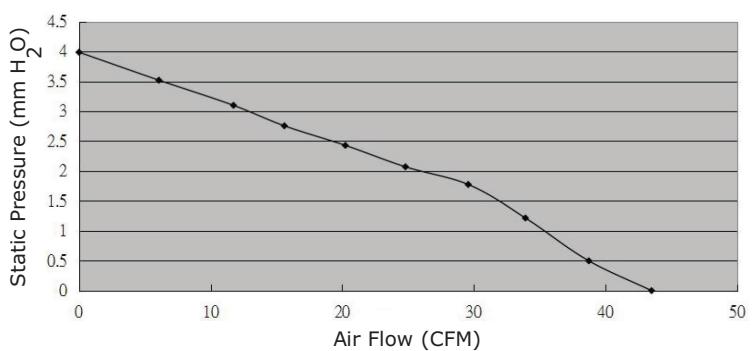
SAFETY & COMPLIANCE

| parameter | conditions/description | min | typ | max | units |
|-----------------------|---|-----|--------|-----|-------|
| insulation resistance | at 500 Vdc between frame and positive terminal | 10 | | | MΩ |
| dielectric strength | at 500 Vac, 60 Hz, 1 minute between housing and positive terminal | | | 5 | mA |
| safety approvals | UL/cUL 507, TUV (EN/IEC 62368-1:2020+A11) | | | | |
| EMI/EMC | EN 55032:2015, EN 55035:2017 | | | | |
| life expectancy | at 40°C, 65% RH, 90% confidence level | | 40,000 | | hours |
| RoHS | yes | | | | |

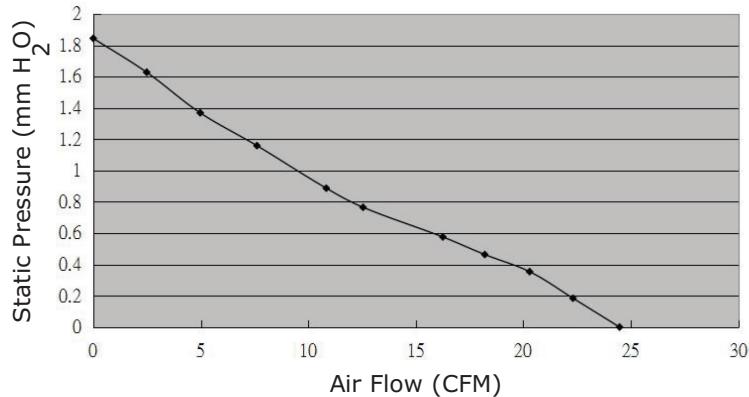
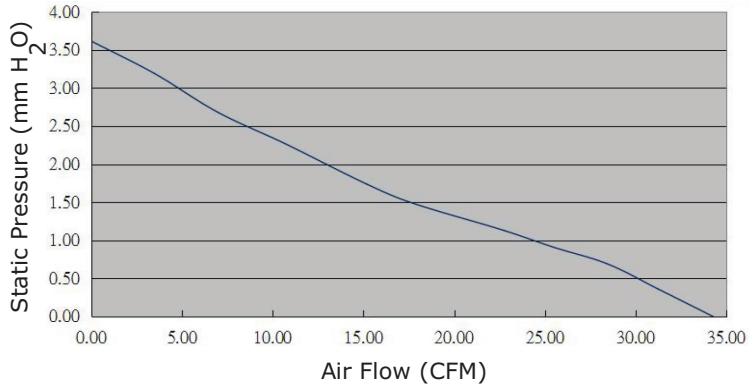
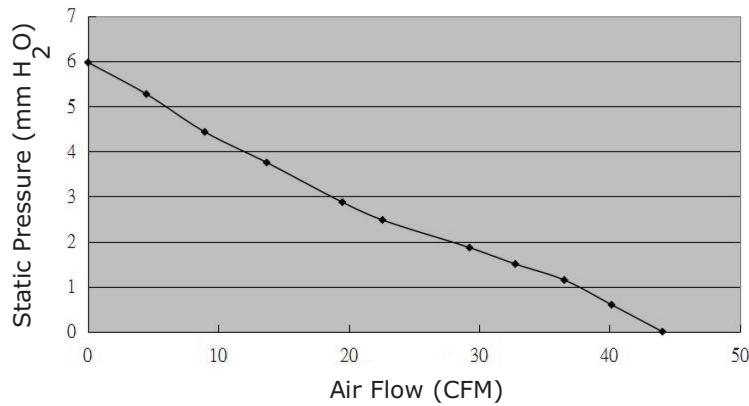
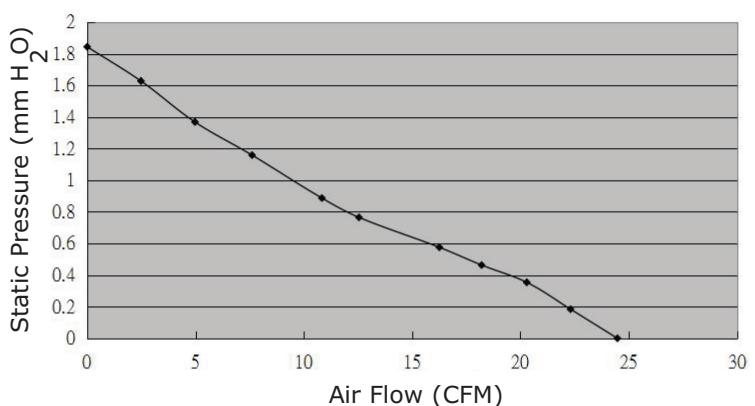
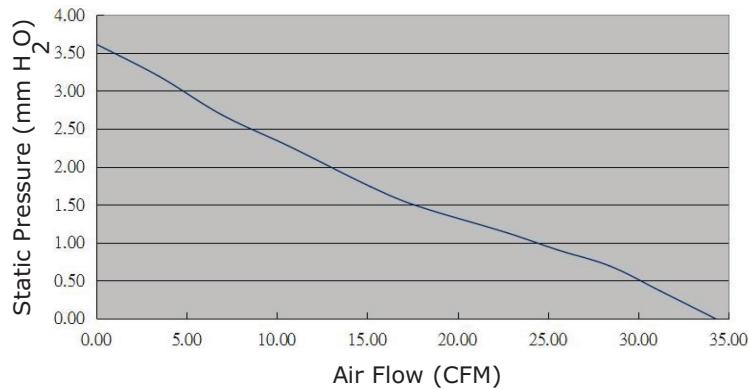
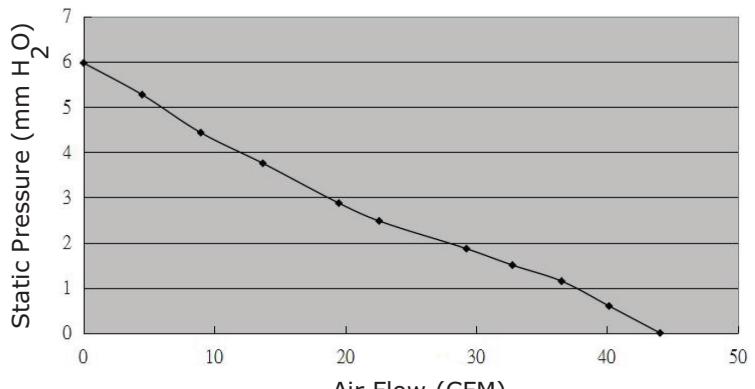
ENVIRONMENTAL

| parameter | conditions/description | min | typ | max | units |
|-----------------------|------------------------|-----|-----|-----|-------|
| operating temperature | | -10 | | 70 | °C |
| storage temperature | | -40 | | 75 | °C |
| operating humidity | non-condensing | 35 | | 85 | % |
| storage humidity | non-condensing | 35 | | 85 | % |

PERFORMANCE CURVES

CFM-8015CF-120-213**CFM-8015CF-130-301****CFM-8015CF-140-363****CFM-8015CF-220-213****CFM-8015CF-230-301****CFM-8015CF-240-363**

PERFORMANCE CURVES (CONTINUED)

CFM-8020CF-125-273**CFM-8020CF-135-346****CFM-8020CF-145-401****CFM-8020CF-225-273****CFM-8020CF-235-346****CFM-8020CF-245-401**

MECHANICAL

| parameter | conditions/description | min | typ | max | units |
|-----------------------|--|------|------|------|----------|
| motor | 4 pole DC brushless | | | | |
| bearing system | omniCOOL™ bearing system | | | | |
| direction of rotation | counter-clockwise viewed from front of fan blade | | | | |
| dimensions | CFM-8015CF models: 80 x 80 x 15.4 CFM-8020CF models: 80 x 80 x 20.0 | | | | mm mm |
| material | PBT (UL94V-0) | | | | |
| weight | CFM-8015CF models: weight varies by model CFM-8020CF models: weight varies by model | 50.5 | 55.1 | 61.0 | g |

MECHANICAL DRAWING

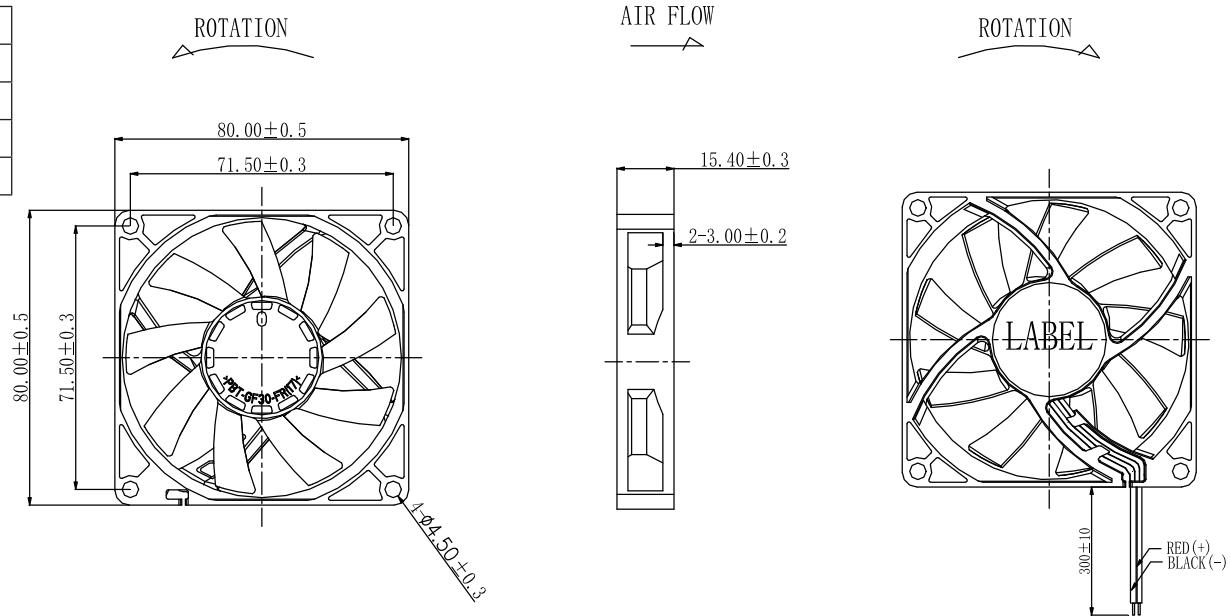
units: mm

wire: UL 1007, 26 AWG

| MOUNTING SCREW (Pan Head) | | | |
|---------------------------|------|------------------|------------|
| Screw Type | Size | Standard | Torque |
| Machine Screw | M4 | JIS B1111-1974 | 7.5 kgf-cm |
| Self-tapping Screw | M5 | JIS B1122 Type 2 | 7.5 kgf-cm |

CFM-8015CF

| WIRE CONNECTIONS | |
|----------------------|-------------|
| Wire Color | Function |
| Red | +Vin |
| Black | -Vin |
| Yellow ¹⁰ | Tach Signal |



Notes: 10. Wires only present on versions with output signals.

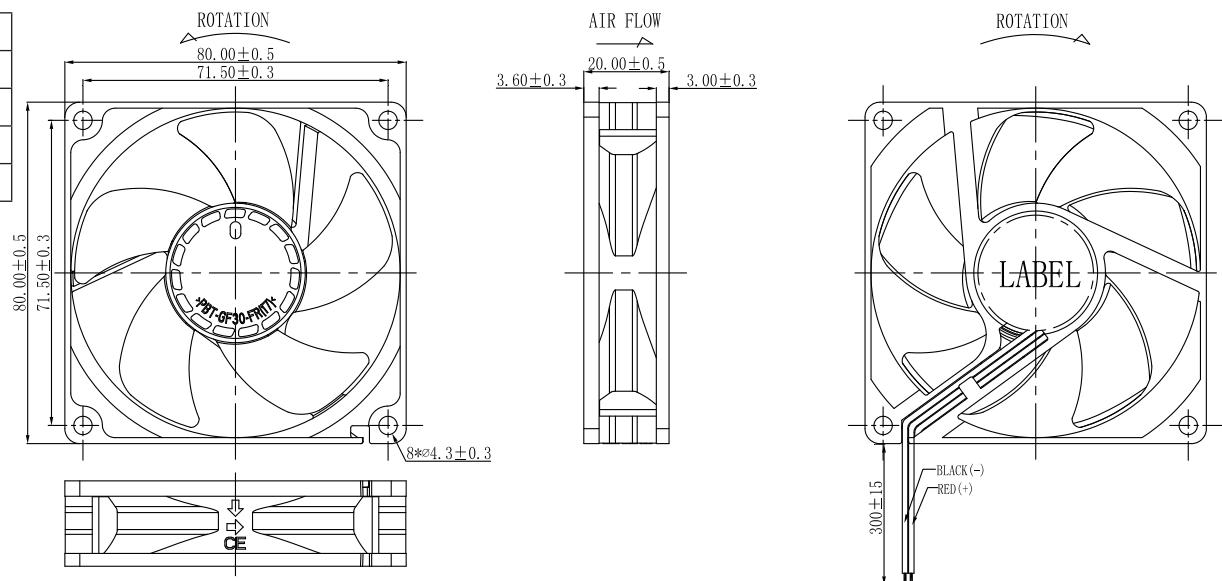
MECHANICAL DRAWING (CONTINUED)

units: mm

wire: UL 1007, 24 AWG

CFM-8020CF

| WIRE CONNECTIONS | |
|----------------------|-------------|
| Wire Color | Function |
| Red | +Vin |
| Black | -Vin |
| Yellow ¹⁰ | Tach Signal |



Notes: 10. Wires only present on versions with output signals.

APPLICATION NOTES

Auto Restart Protection

When the fan motor is locked by an external force, the device will temporarily turn off electrical power to the motor and restart automatically when the locked rotor condition is released.

Polarity Protection

Able to withstand 10 minutes of reverse polarity connection between the positive and negative wires without causing damage.

Tachometer Signal (Yellow Wire)

The tachometer signal is for detecting the rotational speed of the fan motor. The output will be a square wave when fan is operating and VFG or VCE depending on the locked rotor position when fan motor is locked (See Figures 1~2 below).

Figure 1: Tachometer Output Circuit

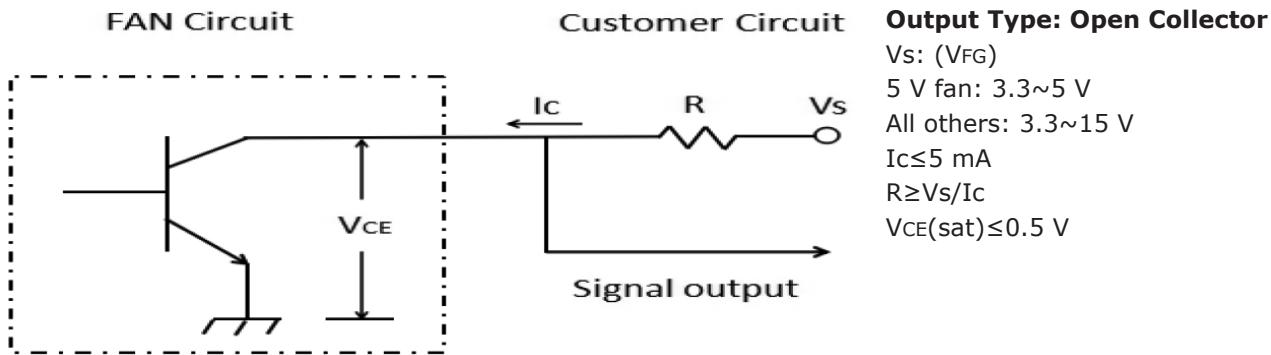
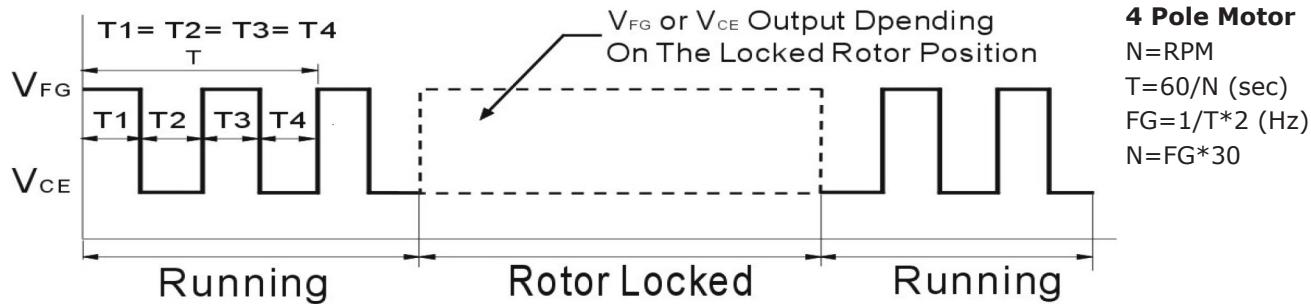


Figure 2: Tachometer Output Waveform



REVISION HISTORY

| rev. | description | date |
|-------------|--------------------|-------------|
| 1.0 | initial release | 10/15/2021 |

The revision history provided is for informational purposes only and is believed to be accurate.

CUI DEVICES

CUI Devices offers a one (1) year limited warranty. Complete warranty information is listed on our website.

CUI Devices reserves the right to make changes to the product at any time without notice. Information provided by CUI Devices is believed to be accurate and reliable. However, no responsibility is assumed by CUI Devices for its use, nor for any infringements of patents or other rights of third parties which may result from its use.

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