CUI DEVICES

SERIES: CFM-30B | DESCRIPTION: DC AXIAL FAN

FEATURES

- 30 x 30 mm frame
- multiple speed options for different cooling needs
- auto restart protection standard on all models
- tachometer signal available
- 5 Vdc and 12 Vdc models available
- dual ball bearing construction



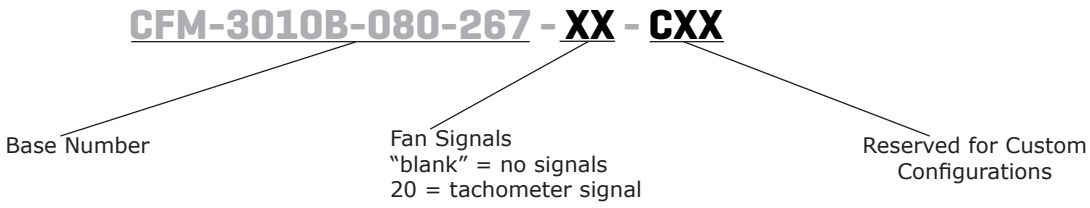
RoHS c UL us CE

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±15%)	(CFM)	(inch H_2O)	typ (dBA)
CFM-3010B-080-267	5	4.5~5.5	0.17	0.85	8,000	2.52	0.08	26.8
CFM-3010B-0100-316	5	4.5~5.5	0.24	1.20	10,000	3.15	0.13	31.6
CFM-3010B-0130-373	5	4.5~5.5	0.51	2.55	13,000	4.10	0.22	37.3
CFM-3010B-180-267	12	10.8~13.2	0.09	1.08	8,000	2.52	0.08	26.8
CFM-3010B-1100-316	12	10.8~13.2	0.11	1.32	10,000	3.15	0.13	31.6
CFM-3010B-1130-373	12	10.8~13.2	0.17	2.04	13,000	4.10	0.22	37.3

Notes:
1. At rated voltage, after 3 minutes.
2. At rated voltage, room temperature, 65% humidity, 0 inch H_20 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. All specifications are measured at 25°C, 65% relative humidity unless otherwise specified.

PART NUMBER KEY



INPUT

parameter	conditions/description	min	typ	max	units
operating input voltage[6]	5 Vdc input models 12 Vdc input models	4.5 10.8	5 12	5.5 13.2	Vdc Vdc
starting voltage	5 Vdc input models 12 Vdc input models		3.5 9.0		Vdc Vdc

Note: 6. See Model section on page 1 for specific input voltage ranges.

PERFORMANCE[7]

parameter	conditions/description	min	typ	max	units
rated speed	at rated voltage, 25°C, after 3 minutes	8,000		13,000	RPM
air flow	at 0 inch H_2O, see performance curves	2.52		4.10	CFM
static pressure	at 0 CFM, see performance curves	0.08		0.22	inch H_2O
noise	at 1 m, rated speed	26.8		37.3	dBA

Note: 7. See Model section on page 1 for specific values.

PROTECTIONS / FEATURES[8]

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

Notes: 8. See Application Notes for details.

SAFETY & COMPLIANCE

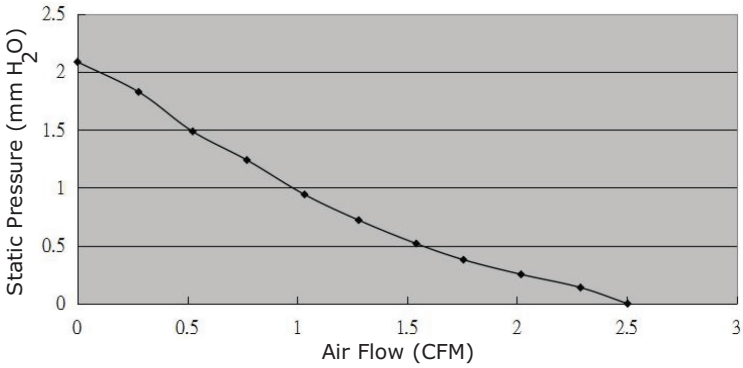
parameter	conditions/description	min	typ	max	units
insulation resistance	at 500 Vdc between frame and positive terminal	10			MΩ
dielectric strength	at 500 Vac, 60 Hz, 1 minute between housing and positive terminal			5	mA
safety approvals	UL/cUL 507, TUV (EN/IEC 62368-1:2020+A11)				
EMI/EMC	EN 55032:2015, EN 55035:2017				
life expectancy	at 40°C, 65% RH, 90% confidence level		70,000		hours
RoHS	yes				

ENVIRONMENTAL

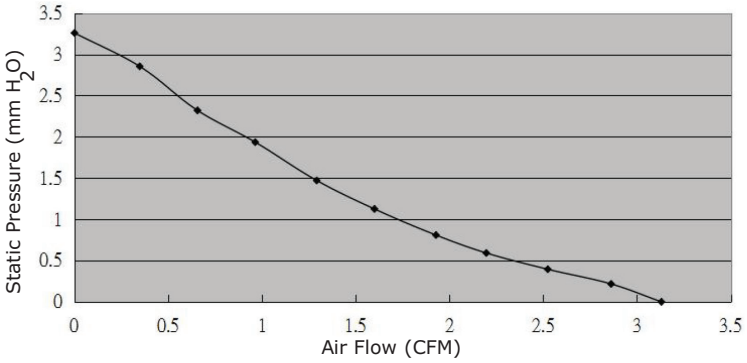
parameter	conditions/description	min	typ	max	units
operating temperature		-10		70	°C
storage temperature		-40		75	°C
operating humidity	non-condensing	35		85	%
storage humidity	non-condensing	35		85	%

PERFORMANCE CURVES

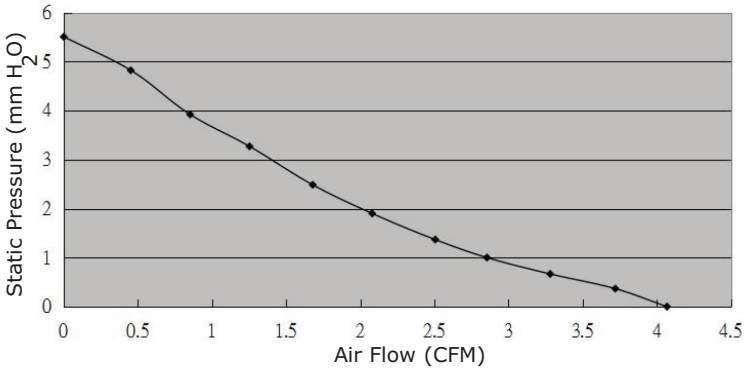
CFM-3010B-080-267



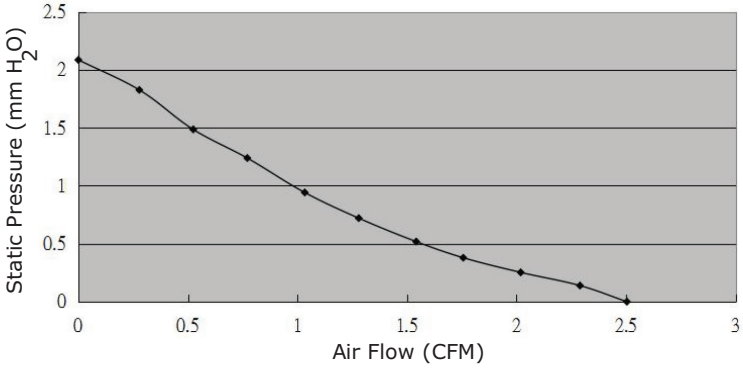
CFM-3010B-0100-316



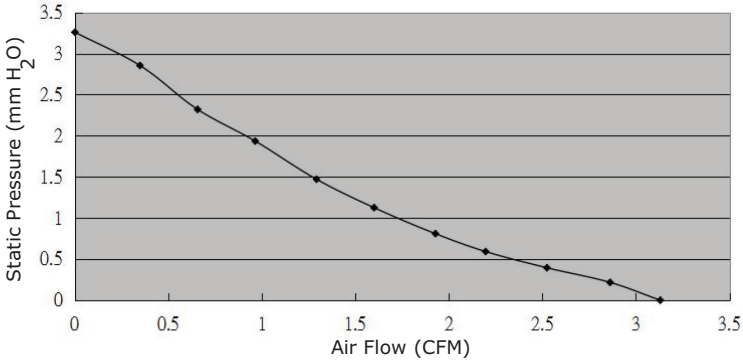
CFM-3010B-0130-373



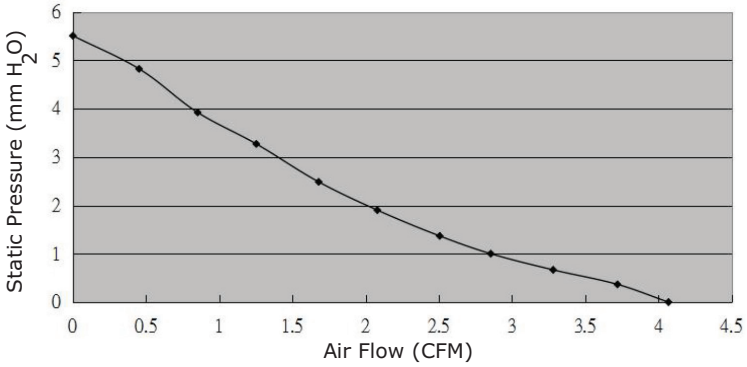
CFM-3010B-180-267



CFM-3010B-1100-316



CFM-3010B-1130-373



MECHANICAL

parameter	conditions/description	min	typ	max	units
motor	4 pole DC brushless				
bearing system	dual ball bearing				
direction of rotation	counter-clockwise viewed from front of fan blade				
dimensions	30 x 30 x 10.5				mm
material	PBT (UL94V-0)				
weight			8.1		g

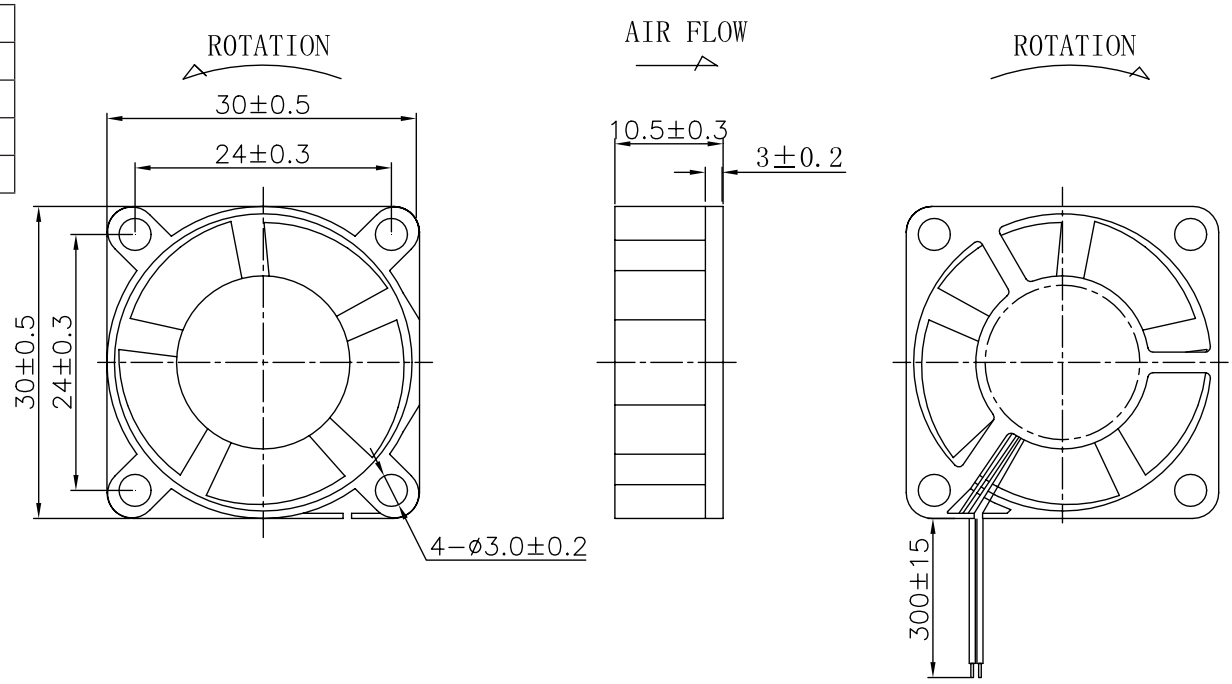
MECHANICAL DRAWING

units: mm

wire: UL 1061, 26 AWG

MOUNTING SCREW (Pan Head)			
Screw Type	Size	Standard	Torque
Machine Screw	M2.5	JIS B1111-1974	7.5 kgf-cm

WIRE CONNECTIONS	
Wire Color	Function
Red	+Vin
Black	-Vin
Yellow[9]	Tach Signal



Notes: 9. Wires only present on versions with output signals.

APPLICATION NOTES

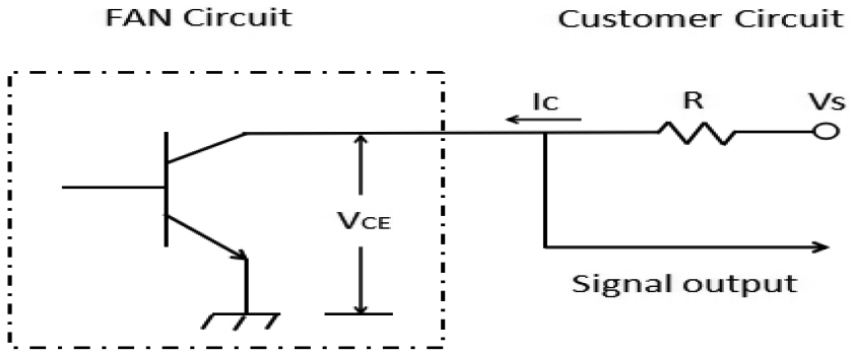
Auto Restart Protection

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.

Tachometer Signal (Yellow Wire)

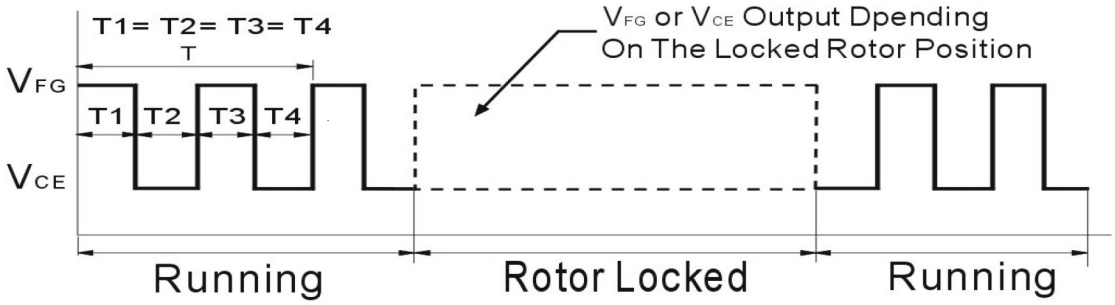
The tachometer signal is for detecting the rotational speed of the fan motor. The output will be a square wave when fan is operating and V_{FG} or V_{CE} depending on the locked rotor position when fan motor is locked (See Figures 1~2 below).

Figure 1: Tachometer Output Circuit



Output Type: Open Collector
Vs: (V_{FG})
5 V fan: 3.3~5 V
All others: 3.3~15 V
Ic≤5 mA
R≥Vs/Ic
V_{CE}(sat)≤0.5 V

Figure 2: Tachometer Output Waveform



4 Pole Motor
N=RPM
T=60/N (sec)
FG=1/T*2 (Hz)
N=FG*30

REVISION HISTORY

rev.	description	date
1.0	initial release	04/14/2020
1.01	added tachometer signal option, updated safeties	05/19/2021

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.

CUI Devices products are not authorized or warranted for use as critical components in equipment that requires an extremely high level of reliability. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

cuidevices.com

Unikeyic Electronics

Global Electronic Components Distributor

Click to view pricing, inventory, delivery, and lifecycle information:

Same Sky:

CMI-9653S-SMT-TR CFM-A238BF-270-651 TBL004V-508-02BE-2GY CPI-1375IC-80T
CFM-2507CF-0140-313 CFM-6015V-239-292-20 CMM-2718AT-42316-TR CMA-4544PF-W
CPT-1117-83-SMT-TR PJ-202AH SJ-2523-SMT-TR UJ32-C-H-G-L1-MSMT-TR CPM-2H
CFM-2510B-0130-275 DS01C-254-S-03BE HSE-B20350-NP PJ-058AH SJ-43516-SMT-TR-PI
CMC-5042PF-AC PJ-047BH PR4-5V-450-1A TBP01R1-508-14BE TB007-508-02BE
CDM1222-12A-FW-F16-050-67 CMP-5247TF-K PJ-067B SJ1-3535N DS04-254-2-02BK-SMT
TBP02P1-381-10BE CBT-09427-SMT-TR