SPECIFICATION

MODEL
## K-DC82-24BL-8601

Product description

K-DC82-24BL-8601 is an axial-flow fan for cooling and condensing systems. The fan is a 12-inch, fully enclosed product. Unless otherwise noted, the parameters in this document are defined or tested under the following conditions.

1) Temperature: 20 ° C main 5 ° C

2) voltage: DC26V ± 0.2 V, measured value of connector end.

External dimensions and interfaces
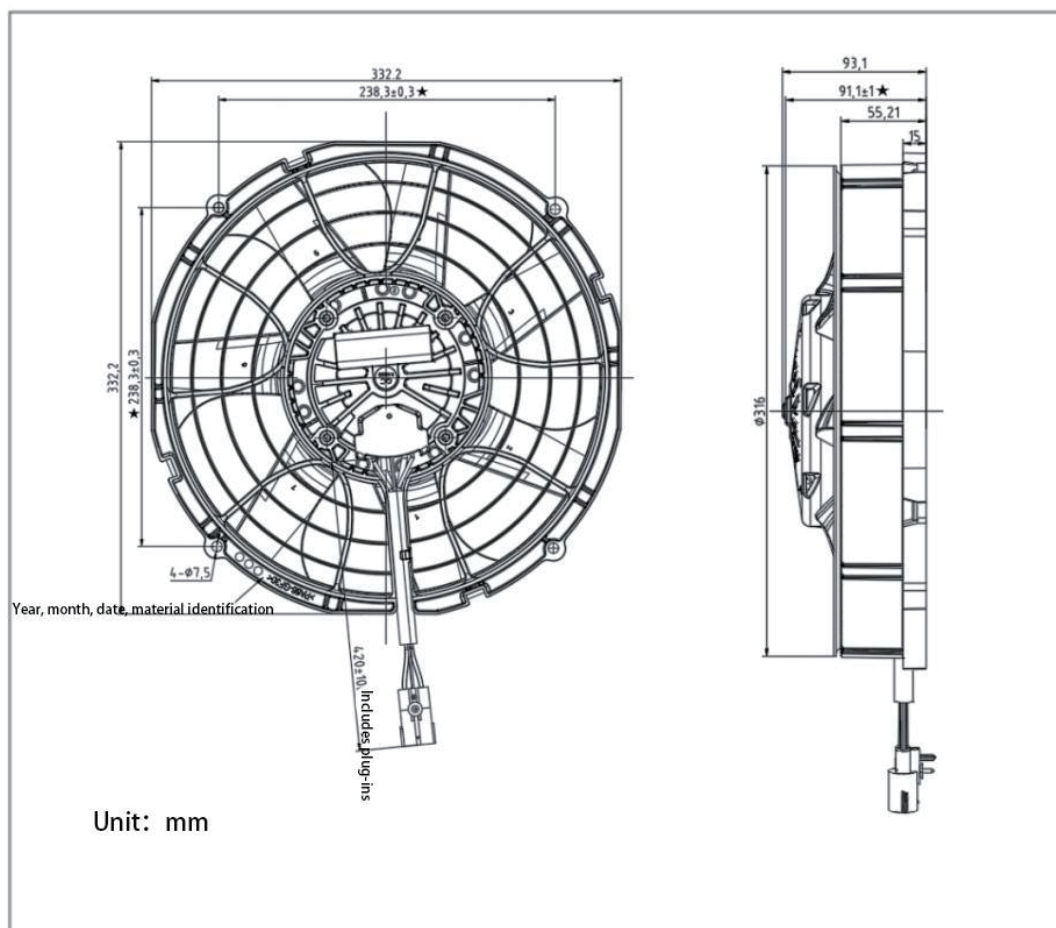
Connectors
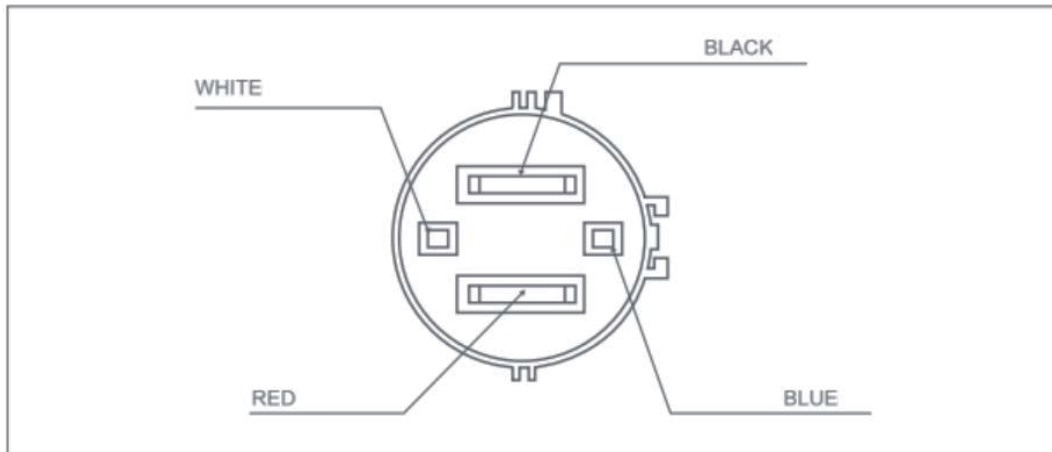
Definition of connector pin wiring

Connector :YAZAKI HYBRID (USCAR-2 compliant)					
Product number :7282-8497-90					
Identification number	Pin number	color	Seal material	Pin material	Wire harness
+D	1	Red	7157-3580	7114-3251	12AWG
-D	2	Black	7157-3580	7114-3251	12AWG
FO	3	White	7158-3030-50	7114-4102-02	12AWG
PWM/E	4	Blue	7158-3030-50	7114-4102-02	12AWG

Fan Performances
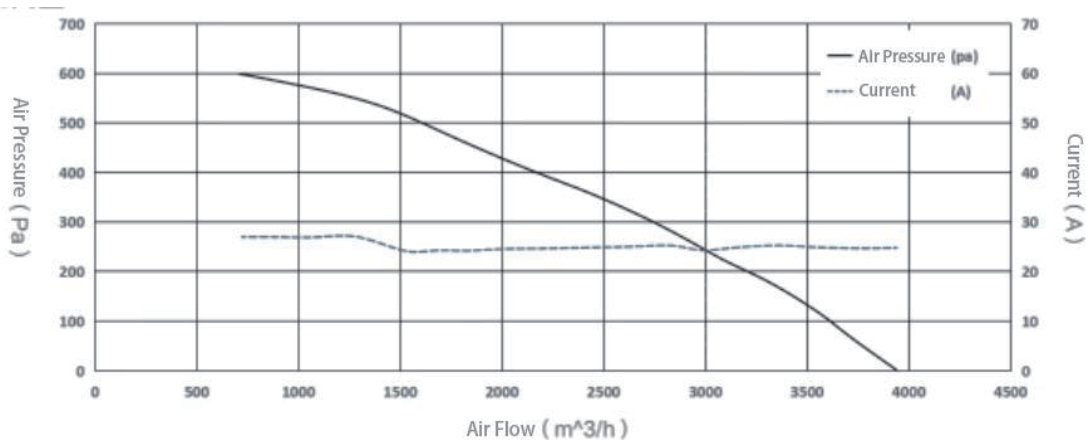
Speed

Item	Date	Unit
Min.Speed	900	RPM
Max.Speed	4300	RPM

Noise

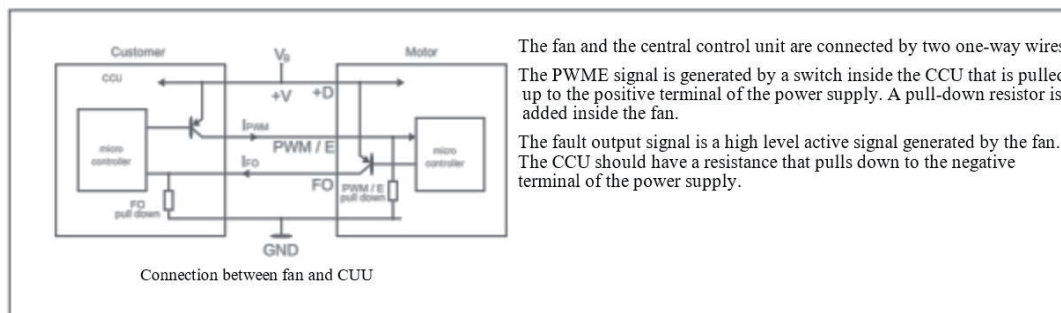| Noise	Distance between microphone and fan center
84dBA	1m±0.05m

Weight

Fan weight	2.45Kg

Hardware Function

Unless otherwise stated, the following conditions for the fan test:
Temperature :20°C+5°C
Voltage :26.0V±0.2V(fan connector position)
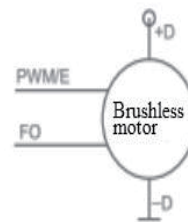
Interface drive circuit

Connection between fan and CUU

The fan and the central control unit are connected by two one-way wires.

The PWME signal is generated by a switch inside the CCU that is pulled up to the positive terminal of the power supply. A pull-down resistor is added inside the fan.

The fault output signal is a high level active signal generated by the fan. The CCU should have a resistance that pulls down to the negative terminal of the power supply.
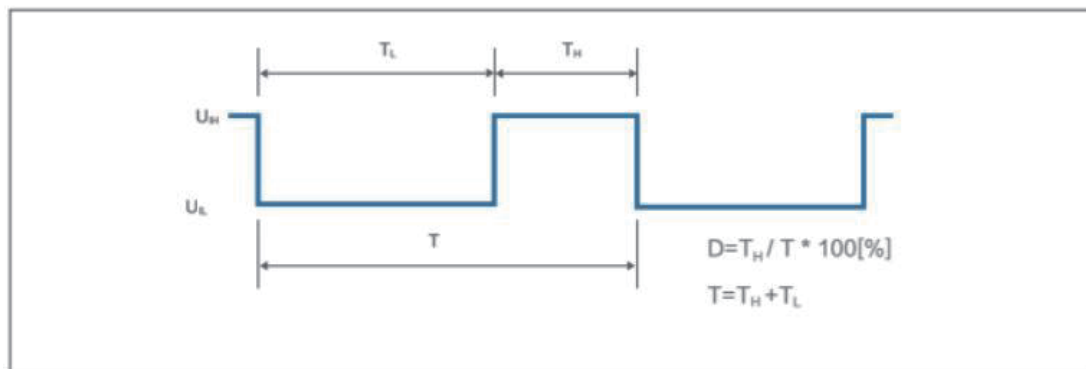
PWM/E input signal

1) PWM/E input signal is high-level effective signal

2) duty cycle is equal to high-level time divided by period

$$D = T_H / T * 100[\%]$$
$$T = T_H + T_L$$

3) when high-level time Th is greater than Twakeup, PWM signal will wake the fan from sleep mode.

4) when low-level effective time t is greater than 10 seconds, the fan enters sleep mode.

PWM signal parameters

Item	Min. value	Typical value	Max. value	Unit	Code
PWM signal frequency range	100	120	1000	Hz	FPWM
PWM signal duty cycle range	0		100	%	DPWM
PWM signal high level	10			V	
PWM signal low level			6	V	
PWM signal accuracy		1		%	
Current	0.2	0.3	0.5	mA	
Wake up pulse time	30			uS	Twakeup

Fault output

Normally, the fan fault output port is low, and in the event of any failure, the port outputs high.

Fault output parameters

Item	Min. value	Typical value	Max. value	Unit	Code
FO active level	Vs-2		Vs	V	
FO current			50	mA	

Note: Vs represents the voltage of the fan power supply.
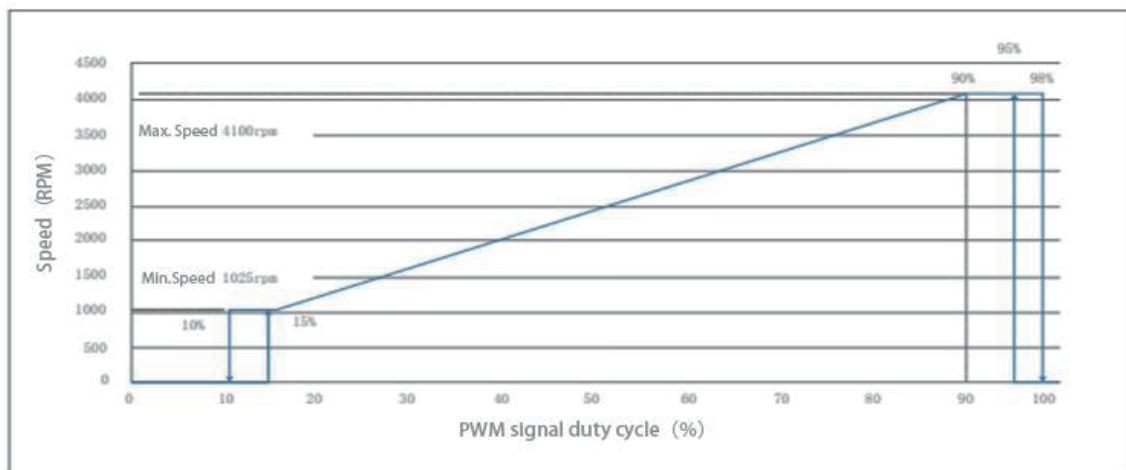
Software Functions

Mode of operation

The fan has four modes of operation：

1. General mode   2.Sleep mode   3. Running mode   4. Diagnostic mode

No.	Operation Mode	Consumption of current	Fan Speed
1	General mode	＜100mA	0
2	Sleep mode	＜200uA	0
3	Running mode	Depends on the fan speed and load	
4	Diagnostic mode	＜100mA	0

Mapping between fan speed and PWM duty cycle

Diagnostic mode

The fan will stop or derate under the following conditions:

1. Overvoltage, low voltage   2. Overload   3. Blocked rotation   4. Overtemperature

Over/under voltage protection

When the power supply is lower than the low voltage protection value or greater than the over voltage protection value (measured at the connector end), the fan will stop running.

Operating voltage parameter

Item	Min. value	Typical value	Max. value	Unit
Rated Voltage		26		V
Input voltage range	16		32	V
Maximum speed voltage	26		32	V
Low voltage protection value		15.5		V
Overvoltage protection value		32.5		V

Overload protection: Two current limits are defined:

l_Limit 1: Alarm value. When the current exceeds this value, the fan will derate operation.

l_Limit 2: Danger value. When the current exceeds this value, the fan will stop running and try to restart within a certain time.

Blocked rotation protection: When the rotor is locked, the fan will stop running.

Overtemperature protection: Two temperature limits are defined:

T_Limit 1: 115°C alarm value. When the temperature exceeds this value, the fan will derate operation.

T_Limit 2: 120°C danger value. When the temperature exceeds this value, the fan will stop running.

T_Recover:108 °C recovery value. When the temperature is lower than the value, the fan restarts.
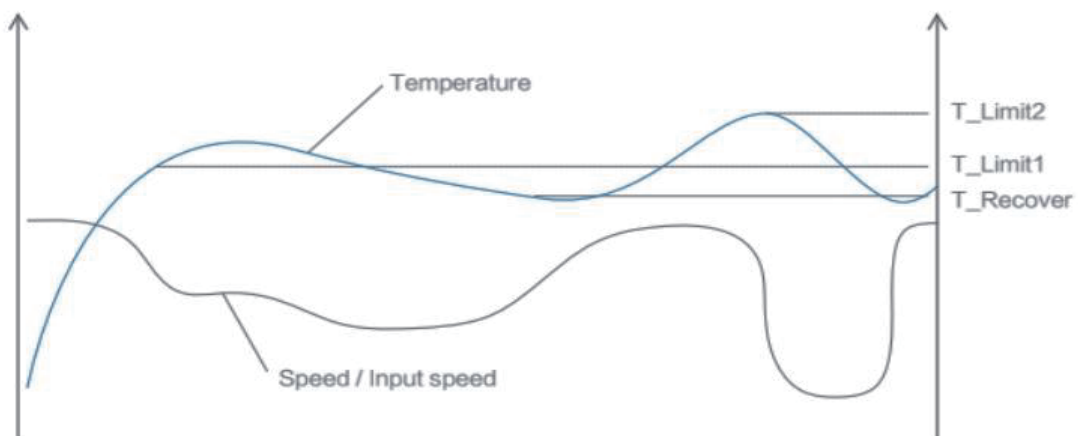
Temperature protection curve

Start Time

Item	Min. value	Typical value	Max. value	Unit
Start time (from Orpm to maximum RPM)		16		S

Electrical performance

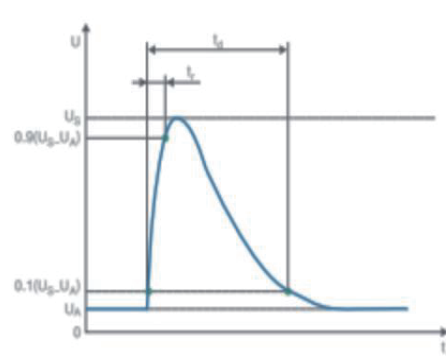Back connection protection：In accordance with ISO16750-2,2010

Reverse connection protection parameters

Item	Value	Unit
Back connection voltage	-27	V
The temperature	25	°C
Time	1	Minutes

Throw load protection

Compliant with IS016750-2,2010

Throw load protection parameter table

Type of pulse：5a			
Item	Value	Unit	
Peak pulse voltage	173	V	
Power supply voltage	28	V	
Internal resistance	2	Ω	
Duration of pulse	400	ms	
Time of rise	5	ms	
Number of pulses	10		
Pulse time interval	60	S	

Performance of sealing

The fan is designed according to IP6K9K and IP68 protection levels.