COOLTRON Industrial Supply, Inc.
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Standards and Specifications
of
Model: FD1238B24W9-81-4JY
(Auto Restart Protection + F/G + PWM + IP55)

A. General Specification

Item		Specification / Standard / Condition		
01	Outline Dimension	120 x 120 x 38 mm		
02	Bearing	Dual Ball Bearing		
03	Rated Voltage	DC 24 V		
04	Operating Voltage	DC 12.0 V ~ DC 27.6 V		
05	Starting Voltage	DC 12.0 V		1. Rated Voltage 2. 25°C, 65% RH
06	Rated Current (Max.)	0.70 A		
07	Actual Current	0.44 A		
08	Power Consumption (Max.)	16.80 W		
09	Rated Speed	3,200	R.P.M. ± 10%	1. Free Air 2. Rated Voltage 3. 25°C, 65% RH 4. After 10 Min. Rotating.
10	Maximum Airflow	181.10	CFM	1. Rated Voltage 2. AMCA Standard 3. Rated Speed
11	Maximum Static Pressure	9.00	mm-H_2O	
12	Noise Level	50.70	dB (A)	1. Rated Voltage 2. Measured in a Non-Echo Chamber 3. CNS 8753 Standard 4. ISO 3744 Test Condition
13	Life Expectancy	80,000	hrs at 40°C	1. L10 at Conf. Level 90%, 2. Rated Voltage
14	Net Weight	214	Gram	
15	Number of Blade	7	Blades	
16	Number of Pole	4	Poles	
17	Rotating Direction	Counter-Clockwise		Looking at Rotor Side
18	Plastic Material: Blade, Housing, Bobbin	Housing: Plastic UL 94V-0 P.B.T. Blade: Plastic UL 94V-0 P.B.T.		
19	Lead Wire	UL Type #26 AWG		Yellow: (+) Black: (-) Green: (Speed sensor) Blue: (PWM)
20	Connector	Without		

B. Electrical Specification

Item		Specification / Condition	
01	Locked Rotor Protection	√	Safety Condition
		√	a. Auto power off after locked at rated voltage for 1 sec. b. After auto power off, circuit attempt to restart in 2-6 sec.
02	Polarity Protection	√	Circuit is protected when VCC & GND are exchanged, the circuit won't be burned within 10 seconds.
03	Insulation Resistance	√	10 m.Ohm / between unshielded wire and frame at 500 VDC/min.
04	Dielectric Strength	√	5 mA Maximum. / Measured between lead wire (+) and frame at 500 VAC/min.

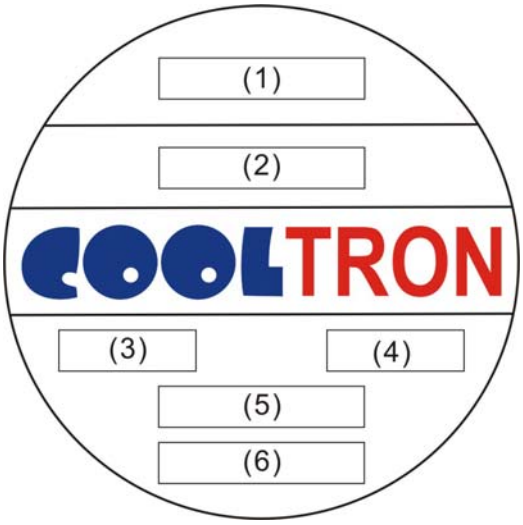
C. Environmental Specification

Item		Specification / Condition
01	Operating Condition	Temperature: -20°C ~ + 70°C Humidity: 15% ~ 90% RH
02	Storage Temperature	Temperature: -40°C ~ + 85°C Humidity: 15% ~ 90% RH
03	Test of high & low Temperature	Test Circulation at -10°C & 70°C two times per 4 hours
04	Packing Vibration Test	Packing condition: X, Y, Z 3 directions, 1.1G load vibration test for 30 min.
05	Packing Shock Proof Test	1 corner, 3 edges, 6 faces natural drop from 60cm high, packed

D. Safety Approvals

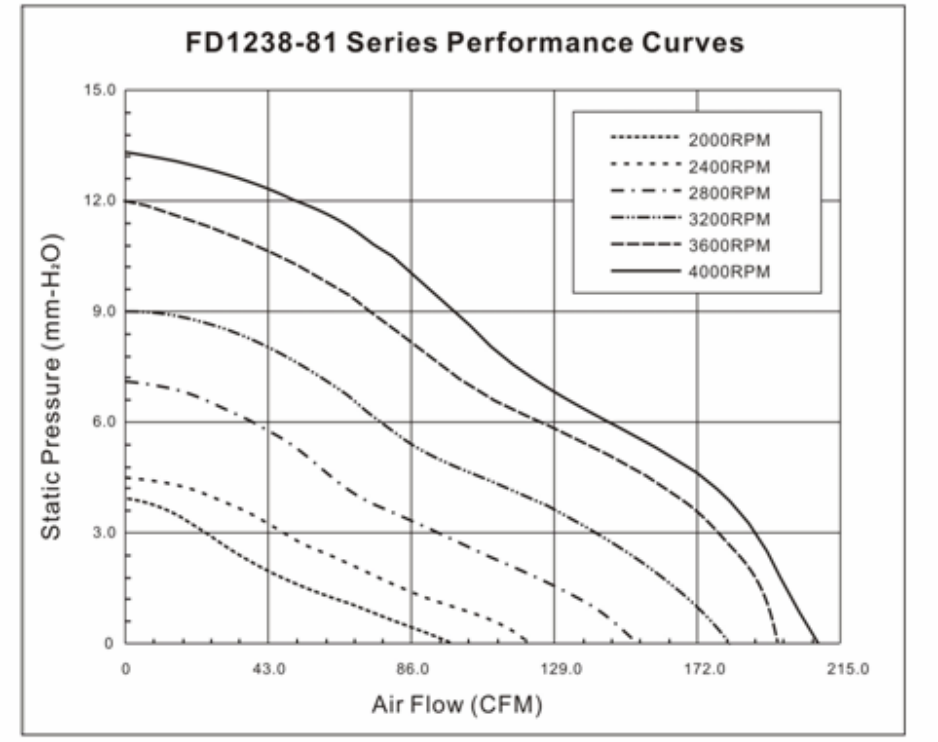
Safety Approval	File No.
UL	E194726
CUL	E194726
TUV	B 05 11 57907

E. Label Marking

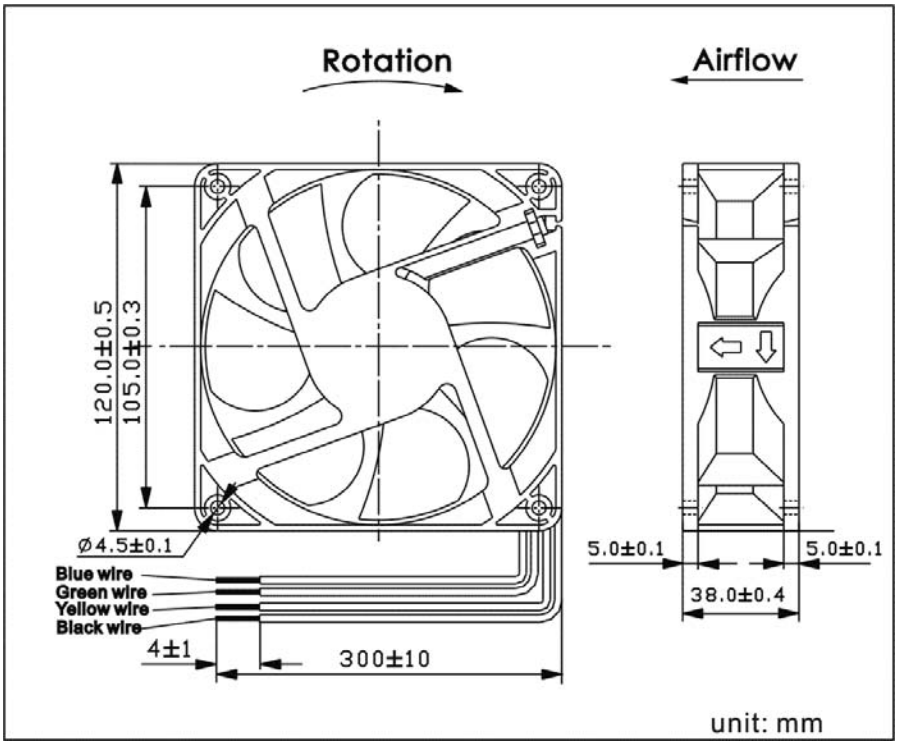


(1)	Safety Approval
(2)	Model Number & Appendix Code
(3)	Rated Voltage
(4)	Power Consumption
(5)	Bearing Type
(6)	Location

F. Air Flow Performance Curve



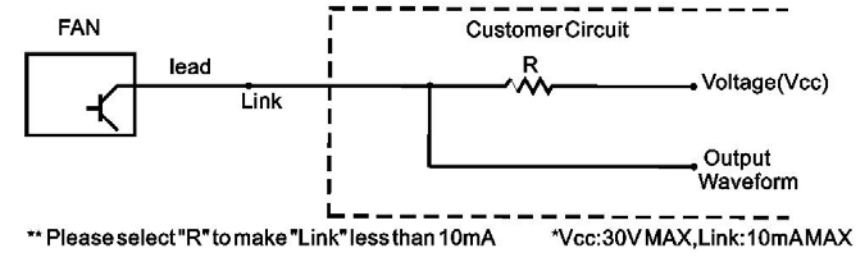
G. Model Drawing



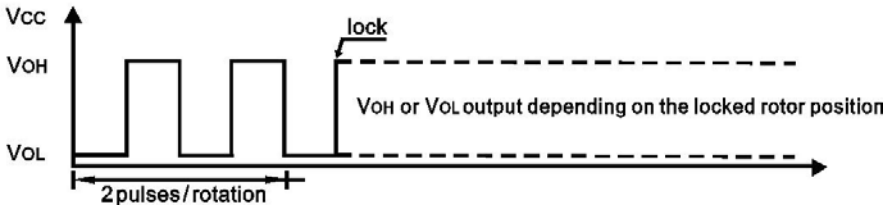
H. Fan Photos

I. Sensor Circuit System:

Speed Sensor or Tachometer



Output Waveform



J. PWM Signal Illustration.

A speed control lead can be provided that will accept a PWM signal from the customer circuit to vary the speed of the fan. The change in speed is linear by changing the Duty-Cycle of the PWM. PWM signal types are standardized as following;

Open collector type and pull-up voltage is changed by maximum operating voltage and sink current by consuming current.

PWM frequency=25KHz
T=T1+T2 ，α=T1 / T
α：Duty-Cycle
Va=α × Vs