

SPECIFICATION SHEET



MODEL NO. :	Art 2765 VTHP-12-PWM-TACHO
DESCRIPTION :	DC Blower Fan
VERSION :	A
RELEASED DATE :	2020.04.27

PRODUCT SPECIFICATION

A. General Specification

Item		Specification		Condition
1	Model No.			
2	Outline Dimension	54.5x51x24.9 mm		
3	Rated Voltage	DC	12 V	
4	Operating Voltage Range	DC	7.5~13.5 V	
5	Start Voltage	DC	7.5 V	
6	Rated Current	2.5	A	At Rated Voltage, 25°C, 65% RH, Free Air
7	Power Consumption	30	W	
8	Rotating Speed	40000	RPM ±10%	At Rated Voltage, 25°C, 65% RH, Free Air
9	Max. Airflow	10.09	CFM	At Rated Voltage AMCA 210 Standard
		0.286	m ³ /min	
10	Max. Static Pressure	538.0	mmH ₂ O	At Rated Current
		21.2	inchH ₂ O	
11	Noise Level	69.2	dB(A)	At Rated Voltage Measured in a non-echo Chamber CNS 8753 Standard ISO 3744 Test Condition
12	Life	50000 hrs	at 25°C	MTTF (Mean Time To Failures) at Confidence. Level 90%
13.	No. of Pole	6	Poles	
14	Rotating Direction	Clockwise View From Label Side		
15	Weight	150	g	
16	Motor Type	DC Brushless Fan Motor		
17	Speed Control	PWM Control (16K~32KHz)		
18	Signal Output	FG Signal		

B. Main Materials / Parts Specification

Materials / Parts		Specification
1	Housing	PLASTIC PBT UL: 94V-0
2	Blade	PLASTIC PBT UL: 94V-0
3	Bearing	Ball Bearing
4	Termination	Lead wires Red (+) Black (-) , Yellow(FG) Blue(PWM) , UL 1007 #22AWG Length 300±10 mm

C. Safety Approvals

Safety Approvals	UL	TUV	
File Number	N/A	N/A	

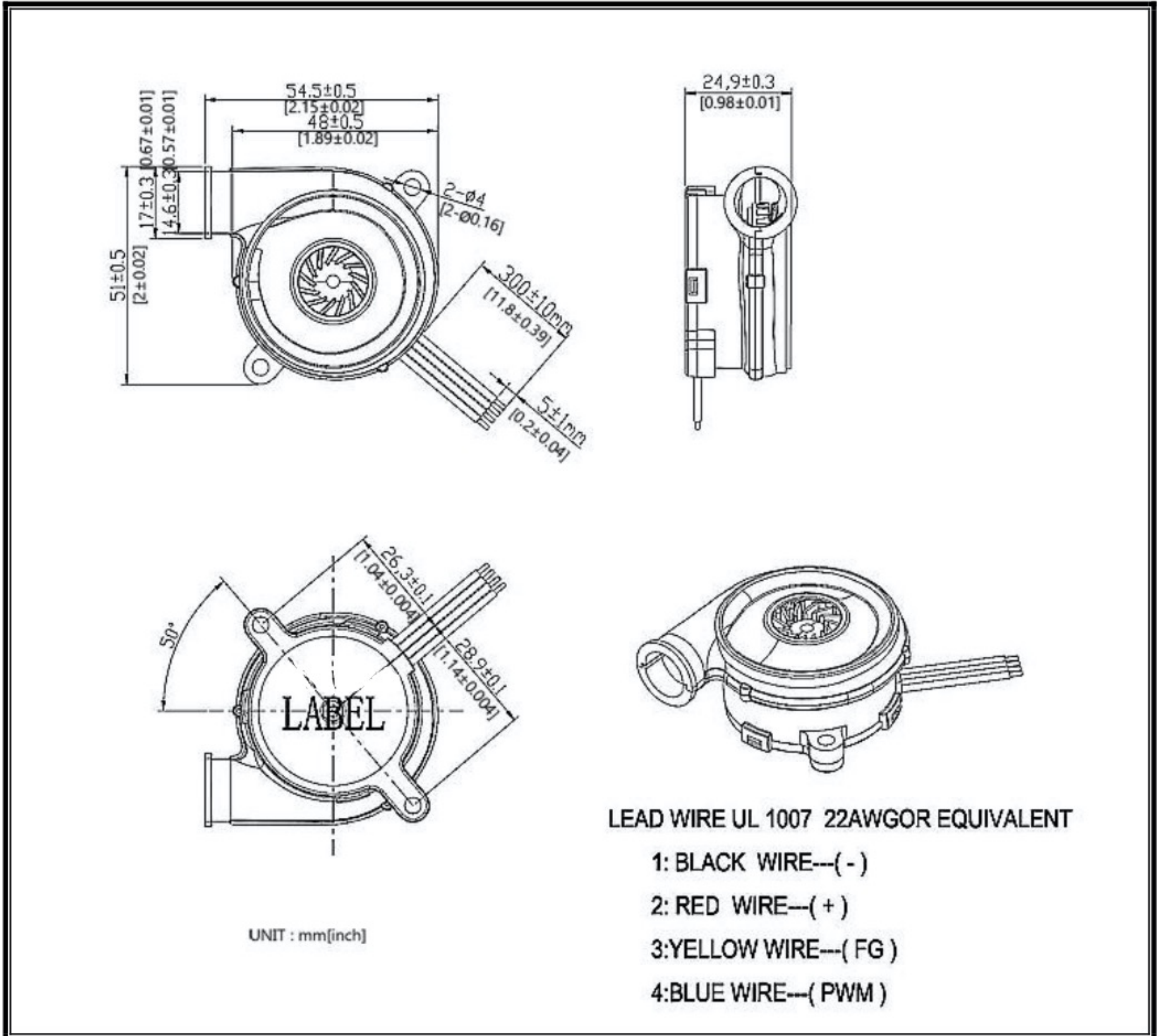
D. Environmental Specification

Item		Specification / Condition
1	Operating Temp. Range	Temperature : -10°C ~ + 60°C
2	Storage Temperature	All function shall be normal after 500 hours storage at -20°C to +70°C with a 24 hours recovery period at room temperature.
3	Humidity Test	After 96 hours, 95% RH, 40+/-2°C per MIL-STD-202F, method 103B humidity test, the measured data on insulation resistance and dielectric strength shall meet the specification.
4	Thermal Shock	Per MIL-STD 202F Method 107D, Condition D
5	Insulation Shock	Class A

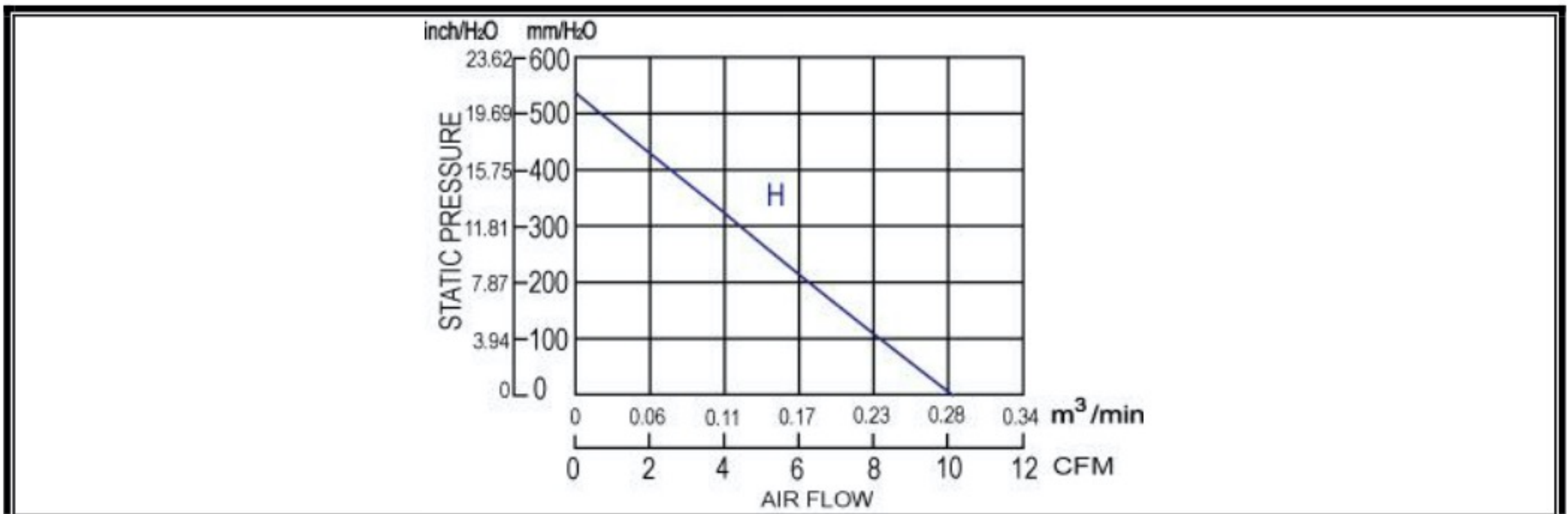
E. Electrical Specification

Item		Specification/Condition
1	Insulation Resistance	10MΩ/Between unshielded wire and frame at 500 VDC\min
2	Dielectric Strength	5mA Max./Measured b\w lead wire (+) and frame at 500 VAC\ min
3	Motor Safety Protection	Open circuit when VCC&GND are exchanged
		Circuit won't be burned within 5seconds when VCC&GND are exchanged
4	Locked rotor Protection	Built-in controller will begin to motivate the fan motor to get it start rotating again when the fan speed suddenly drops to zero in a stuck state.

F. Outline Dimension



G. Air Performance

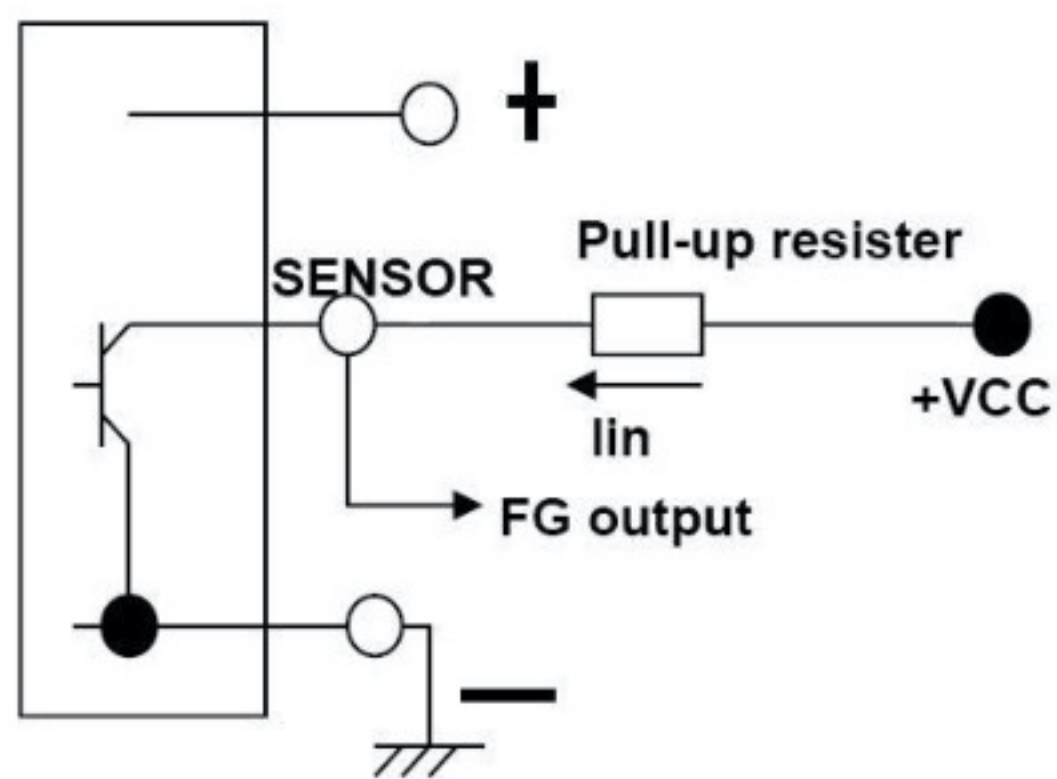


H. Frequency Generator

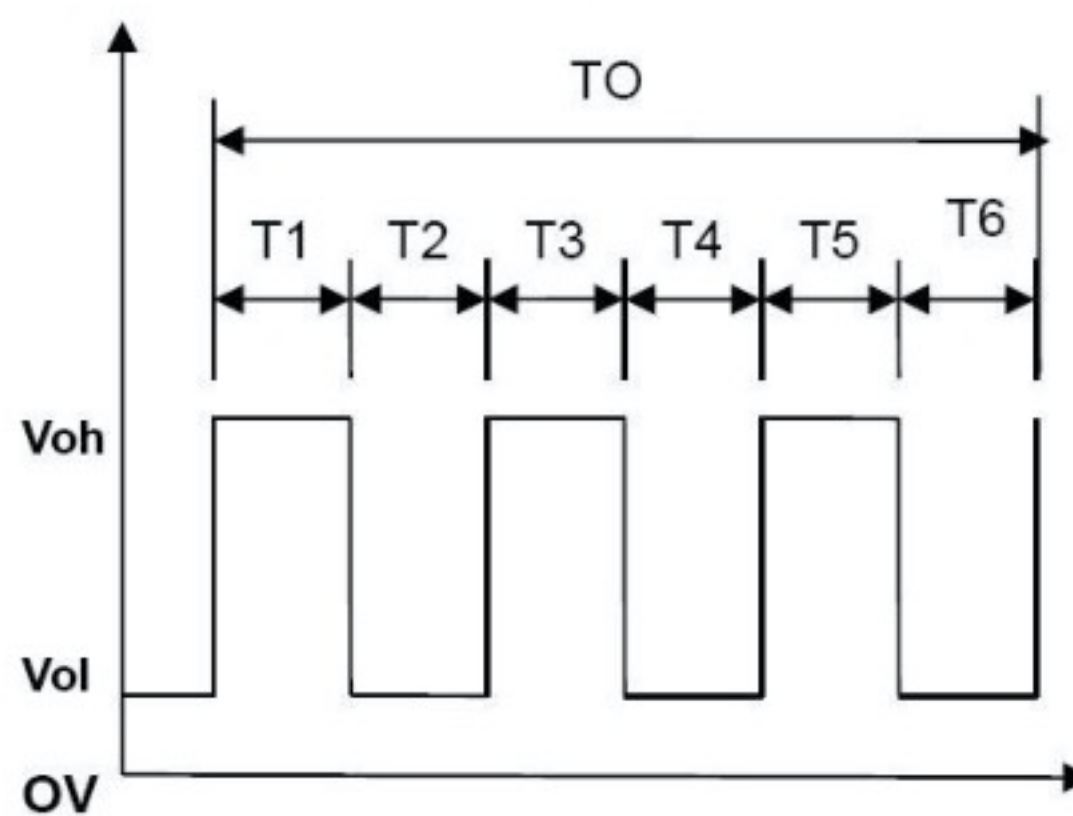
Fan with FG function will create a square wave output. You can know fan speed by sensing the output wave Frequency. Most dc fan have four pole. So when fan run for one round, there will be two high level pulse. About other Multipole brushless fan, high level pulse will be different.

But please notice if you want to sense its output wave, there is an external circuit. Please check the circuit Diagram below. There is no pull-up and VCC value limit. But please notice the Max I_{in} have to be small than 20mA.

Inside of DC fan

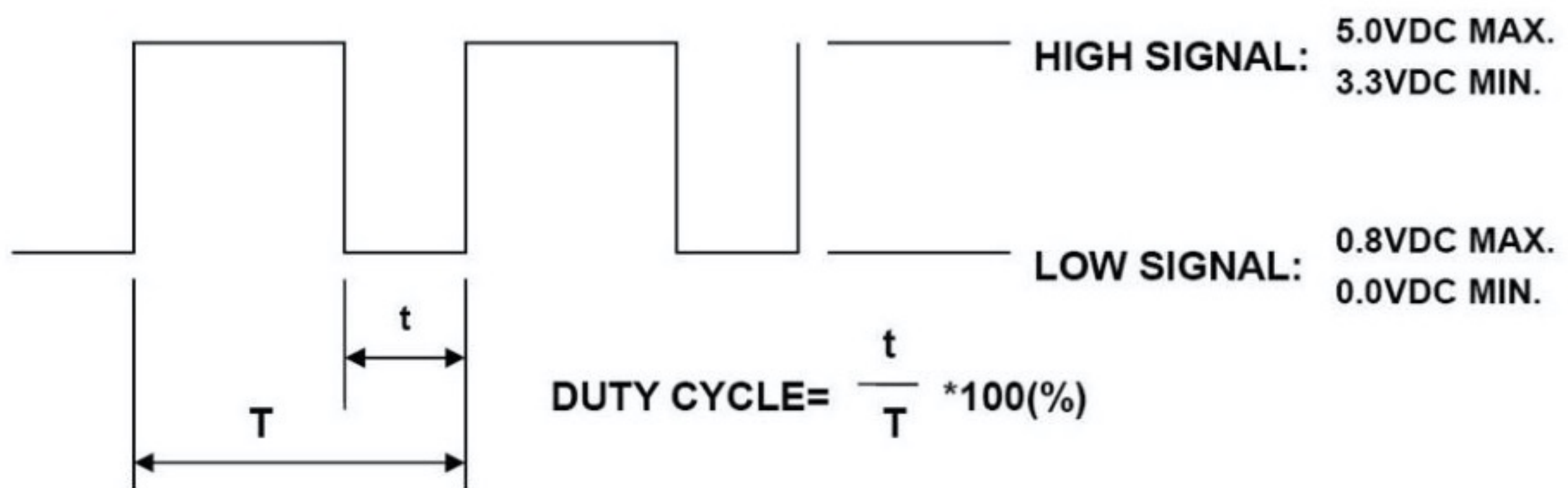


One revolution



I. PWM SPEED CONTROL

SIGNAL VOLTAGE RANGE :



- THE FREQUENCY FOR CONTROL SIGNAL OF THE FAN SHALL BE ABLE TO ACCEPT 16K~32 KHZ.
- THE PREFERRED OPERATING POINT FOR THE FAN IS 25K HZ.
- AT 100% DUTY CYCLE,THE ROTOR WILL SPIN AT MAXIMUM SPEED.
- AT 0% DUTY CYCLE,THE ROTOR WILL STOP.
- WHEN CONTROL SIGNAL LEAD DISCONNECTED,THE FAN WILL MAXIMUM SPEED.
- AT 25K 3%~5% DUTY CYCLE,THE FAN WILL BE ABLE TO START FROM A DEAD STOP.
- THE FAN SPEED CONTROL IS CLOSED-LOOP.