



TF037F

MICRO BLOWERS

FEATURES

- Aerodynamic bearings
- Compact / Light weight
- High static pressures
- Low vibration
- Long life due to aerodynamic bearings without heat dependence
- Resin in full compliance with FDA standards



STANDARD SPECIFICATIONS

- Unless otherwise specified, the environmental conditions are 23°C±5°C, normal humidity, and atmospheric pressure range 90 to 106kPa.

No.	Item	Part number	TF037F-2000-F	Remarks
1	Rated Voltage		DC 12 ~ 24 V	
2	Direction of Rotation		CCW (Counter-Clockwise)	Looking down from the air inlet.
3	Kind of Gas		air	Noncorrosive gas
4	Configuration		Motor with Centrifugal Turbo Blade	Without driving circuit
5	Type of Motor		DC Brushless Motor	
6	Number of Poles		8 Poles (4 pole pairs)	
7	Drive System		3 Phase, Bipolar	
8	Bearings		Aerodynamic Bearings	
9	Impeller		Centrifugal Turbo Blade	
10	Mounting Direction		Shaft vertical to ground, air inlet facing upwards	No vibration, shock, or gyration is to be applied during operation.
11	Rated Rotation Speed		31,000 r/min (reference value)	at 2.0kPa, 100L/min
12	Maximum Input Coil Current		3.0 A rms max.	
13	Rated Power Supply Current		0.67 A max.	at 2.0kPa, 100L/min, at 24V
14	Rated Power Consumption		16.1 W max.	
15	Rated Air Flow		100 L/min	at 2.0 kPa
16	Minimum Air Flow		10 L/min	

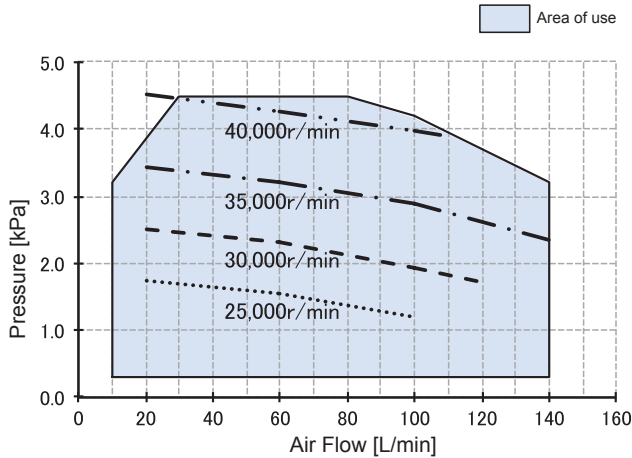
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No.	Item	Specification	Remarks	
17	Rated Pressure	2.0 kPa	at 100 L/min	
18	Maximum Pressure	3.5 kPa	absolute maximum pressure. at 24VDC	
19	Torque Constant	0.0014 ~ 0.0020 N·m/A (reference value)		
20	Min. Rotation Speed	10,000 r/min		
21	Maximum Rotation Speed	45,000 r/min	Within the "Area of use"	
22	Acoustic Audible Noise	65.0 dB(A)max.	at 2.0kPa, at 100L/min measured at 1m from air inlet Include background noise 15dB(A)	
23	Coil Resistance	0.36 ~ 0.66 Ω (reference value)	at 20°C (Between 2 phase)	
24	Coil Inductance	22 ~ 29 μH (reference value)	at 20°C, 10kHz (Between 2 phase)	
25	Insulation Class	Class E	JIS C 4003	
26	Insulation Resistance	1M Ω min. DC500V (between terminal pins and plate)	JIS C 4003	
27	Dielectric Strength	Leak current to be less than 1mA.(AC600V for 1sec. between terminal pins and plate.)	JIS C 4003	
28	Weight	72 g (reference value)		
29	Rotor Inertia	19 g·cm ² (reference value)		
30	Axial Loading	3N max.	maximum axial force applying to the intake (upper housing)	
31	Operating Temperature Range	0 ~ 50 °C		
32	Operating Humidity Range	10 ~ 95%RH	No condensation	
33	Storage Temperature Range	-20 ~ 60 °C		
34	Storage Humidity Range	10 ~ 95%RH	No condensation	
35	Resistance to Vibration	The Blower shall satisfy Specification No.11 ~ 27 after the following test.		Non-operating
		Kind of Vibration	frequency veering	
		Frequency Range	10 ~ 22Hz amplitude 1mm	
			22 ~ 50Hz 19.6m/s ² (2G) (acceleration)	
		Sweep	to-and-fro, approx. 5min.	
		Test Time	X, Y, Z directions, 60min. each	
36	Resistance to Shock	The Blower shall satisfy Specification No.11 ~ 27 after the following test.		Non-operating
		Acceleration	294m/s ² (30G)	
		Pulse Width	6ms	
		Shock Waven	Semi-sinusoidal wave	
		Number of Shock	X, Y, Z, directions, once per each direction	

P-Q CURVE CHARACTERISTICS

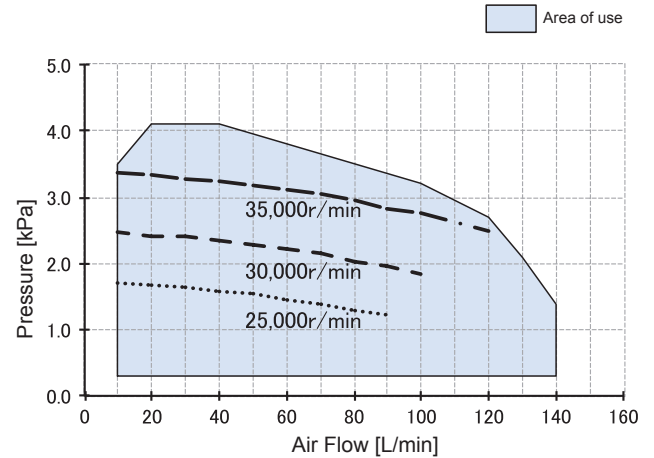
● Operating Range at DC 24V (1atm)



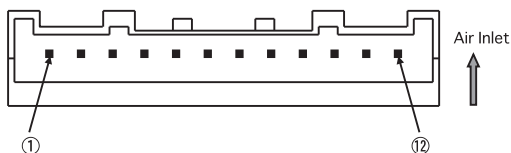
※ Conditions: Ambient temperature 23±5°C, normal humidity, atmospheric pressure (100±2kPa).
The graphs above are provided for reference only. Values are not guaranteed.

※ Make sure the thermistor temperature does not exceed 80°C during blower operation. (Thermistor resistance value R(80 deg C)=1.177kΩ).

● Operating Range at DC 12V (1atm)



INTERFACE



Manufacturer	J.S.T. Mfg. Co., Ltd.
Part No.	SM12B-PASS

【Mating Connector】

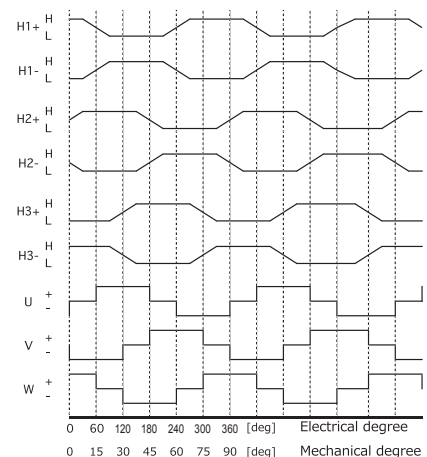
Manufacturer	J.S.T. Mfg. Co., Ltd.
Part No.	12PAF-6S (insulation displacement connector) (retainer : PAFS-12V-S)
	PAP-12V-S (crimp type) (contact : SPHD-001T-P0.5)

※ Either IDC or crimp type can be used as a mating connector.

Pin No.	Symbol	Signal
1	Vcc	(+12V) Hall Element Power Supply
2	H2-	Hall Element 2 Output
3	H2+	
4	H3-	Hall Element 3 Output
5	H3+	
6	H1-	Hall Element 1 Output
7	H1+	
8	GND	GND
9	TH	Thermistor Output
10	V	Motor Coil (V)
11	W	Motor Coil (W)
12	U	Motor Coil (U)

※ Parts used for thermistor output:
Manufacture TDK Corp. Part No. NTCG164BH103JT

● TIMING CHART

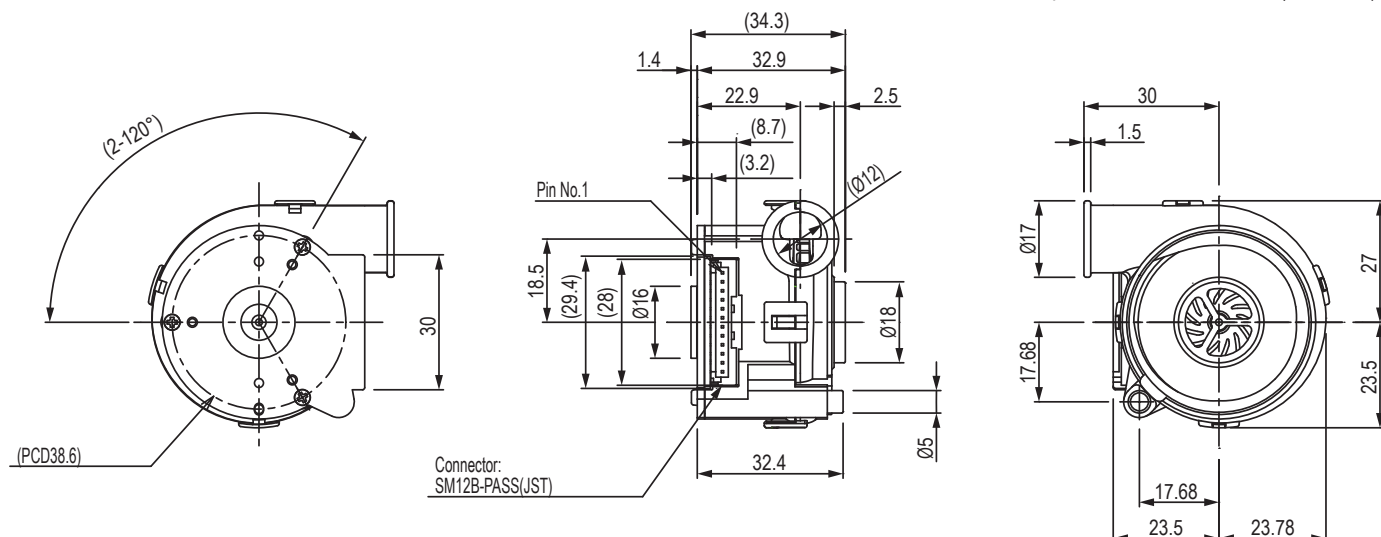


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MICRO BLOWERS

OUTLINE DIMENSIONS

Unless otherwise specified, tolerance : ± 0.5 (Unit: mm)



MARKING



control no. alphabet (A-Z)

day of manufacture refer to Chart 1

month of manufacture refer to Chart 2

year of manufacture last digit of the year (A.D.)

【Chart 1】

day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
code	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	G	H	J	K	L

day	21	22	23	24	25	26	27	28	29	30	31
code	M	N	P	Q	R	T	U	V	W	X	Y

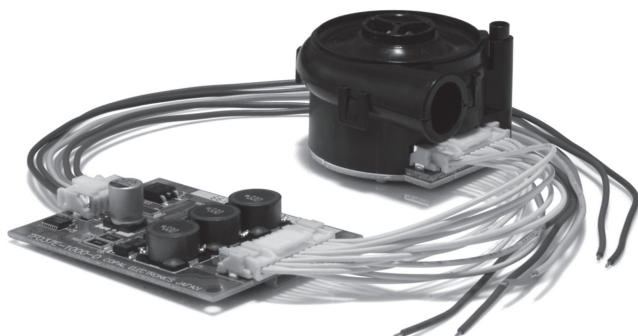
【Chart 2】

month	1	2	3	4	5	6	7	8	9	10	11	12
code	1	2	3	4	5	6	7	8	9	O	N	D

Micro Blower Kit with driver

For the series, Kits with driver and wire harness for the blower available. They will help customers shorten their evaluation and product development times.

Kit Part Number : TF037F-2000-P



List of the kit	
1	Micro Blower (TF037F-2000-F)
2	Driver (TF037 series common)
3	Wire Harness (for Driver-Blower connection)
4	Wire Harness (for Driver-Power connection)

The Drivers are sold separately as an optional item. (Ref.P430)