

New

# TF037C

## MICRO BLOWERS

### FEATURES

- Aerodynamic bearings
- Compact / Light weight
- High static pressures
- Low vibration
- Long life due to aerodynamic bearings without heat dependence
- Two type available with or without mounting bracket
- Resin in full compliance with UL94 V0



### 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	TF037C-2100-F	TF037C-2000-F	Remarks
1	Rated Voltage		DC 24 V±10%		
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		Driving circuit required separately
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		40,000 r/min (reference value)		at 4.0kPa, 100L/min
12	Maximum Input Coil Current		3.0 A rms max.		
13	Rated Power Supply Current		1.2 A max.		at 4.0kPa, 100L/min, at 24V
14	Rated Power Consumption		29 W max.		
15	Rated Air Flow		100 L/min		at 4.0 kPa
16	Minimum Air Flow		10 L/min		

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No.	Item	Part number	TF037C-2100-F	TF037C-2000-F	Remarks
17	Rated Pressure		4.0 kPa		at 100 L/min
18	Maximum Pressure		4.5 kPa		absolute maximum pressure. at 24VDC
19	Torque Constant		0.0020 ~ 0.0026 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		67.0 dB(A)max. at 4.0kPa, 100L/min		at 4.0kPa, 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		17 ~ 23 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 shaft holder.)		JIS C 4003
28	Mounting bracket		With	Without	
29	Weight		94 g	90 g	Reference value
30	Rotor Inertia		21 g·cm <sup>2</sup> (reference value)		
31	Axial Loading		3N max.		maximum axial force applying to the intake (upper housing)
32	Operating Temperature Range		0 ~ 50 °C		
33	Operating Humidity Range		10 ~ 80%RH		No condensation
34	Storage Temperature Range		-20 ~ 60 °C		
35	Storage Humidity Range		10 ~ 90%RH		No condensation
36	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 <sup>2</sup> (2G) (acceleration)		
		Sweep	to-and-fro, approx. 5min.		
Test Time	X, Y, Z directions, 60min. each				
37	Resistance to Shock	The Blower shall satisfy Specification No.11 ~ 27 after the following test.			Non-operating
		Acceleration	294m/s <sup>2</sup> (30G)		
		Pulse Width	6ms		
		Shock Waven	Semi-sinusoidal wave		
		Number of Shock	X, Y, Z, directions, once per each direction		

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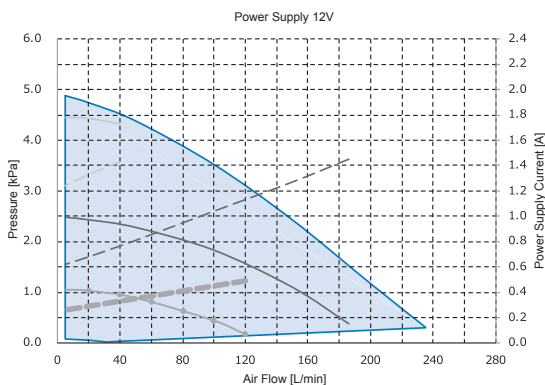
### OPERATING RANGE IN P-Q & Q-I RATING

- P-Q and Q-I conditions must not exceed the ratings listed below.
- The general purpose driver TF037E-1000-D is setup to the configuration for general use. In using the general purpose driver, the output may not reach the maximum ratings listed below.
- P-Q and Q-I characteristics are for reference purpose only. The driver must be configured properly by measuring the actual condition before use.

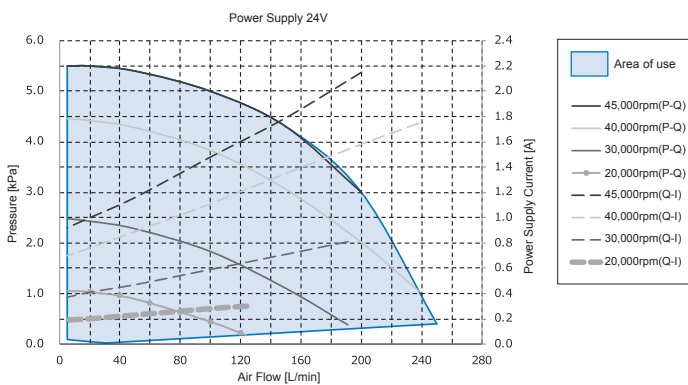
※ The characteristics below are measured with our company's driver at axis vertical position.

※ Ambient Temperature : 25°C , Barometric Pressure: 101.3kPa

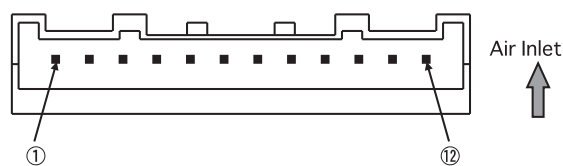
#### Characteristics at 12V P-Q/Q-I



#### Characteristics at 24V P-Q/Q-I



### INTERFACE



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

#### [Mating Connector]

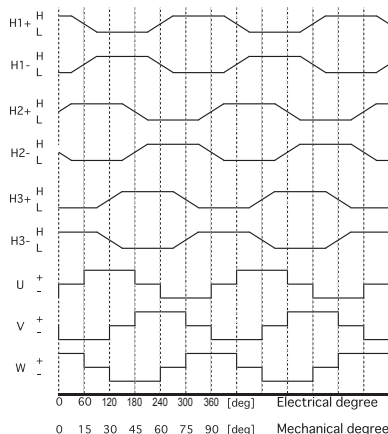
Manufacturer	J.S.T. Mfg. Co., Ltd.
Part No.	12PAF-6S (insulation displacement connector) (retainer : PAFS-12V-S)
	PAP-12V-S (crimp type) (contact : SPHD-001T-P0.5)

※ 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-	
5	H3+	Hall Element 3 Output
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

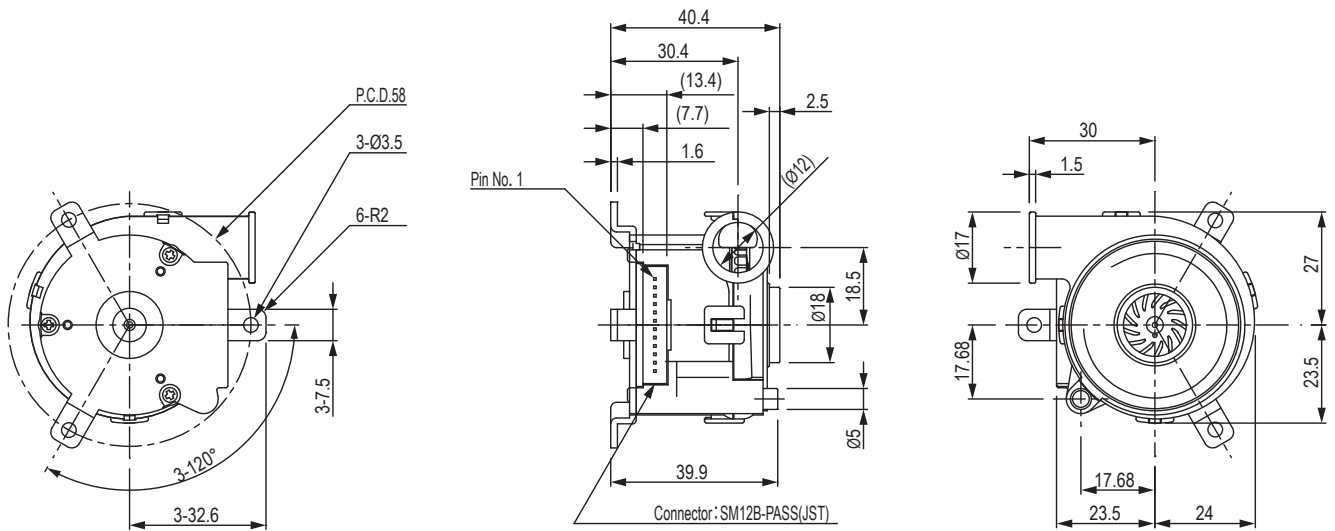


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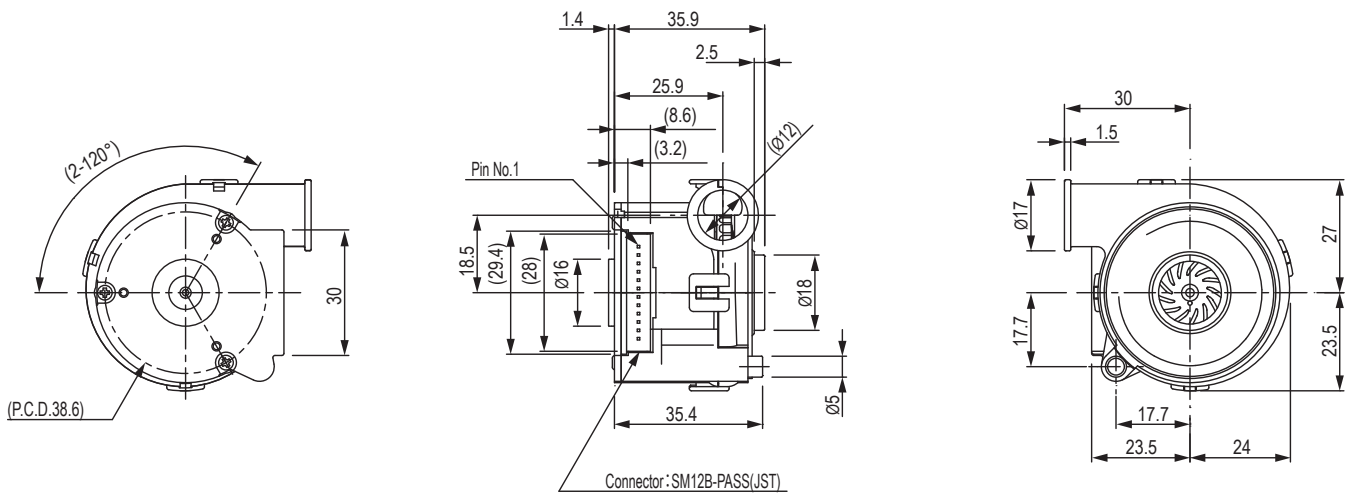
## OUTLINE DIMENSIONS

Unless otherwise specified, tolerance :  $\pm 0.5$  (Unit: mm)

### TF037C-2100-F

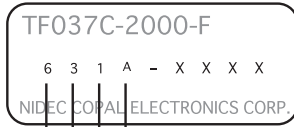


### TF037C-2000-F



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## MARKING



Control no. : alphabet (A-Z)

Date 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】

Date	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

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

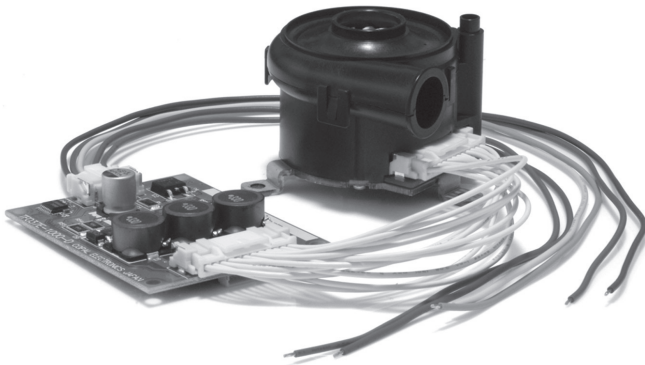
【Chart 2】

month	1	2	3	4	5	6	7	8	9	10	11	12
Code	1	2	3	4	5	6	7	8	9	0	N	D

## Micro Blower Kit with driver

For the model with mounting brackets "TF037C-2100-F", Kits with driver and wire harness for the blower available. They will help customers shorten their evaluation and product development times.

### Kit Part Number : TF037C-2100-P



List of the kit	
1	Micro Blower (TF037C-2100-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)