

New

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 106 kPa.

No.	Item	Part number	TF037F-2000-F	Remarks
1	Operating Voltage Range		10~30 V	
2	Direction of Rotation		(Counterclockwise viewing from the air vent side)	
3	Kind of Gas		Normal Air	Do not use to any corrosive gas.
4	Type of Motor		3 phase 8 pole Brushless (Y Connection)	
5	Number of Poles		8 Poles (4 pole pairs)	
6	Bearing Type		Aero Dynamic Bearing	
7	Recommended Mounting Position		Axis Vertical (Plate Downward)	Avoid vibration and shock while the product is operating. It may damage product
8	Maximum Input Coil Current		3.0 A Max.	In case, the rotor is lock up, the coil may be destroyed by surge current. The protection circuit to prevent surge current must be installed for safety.
9	Power Supply Current		0.9 A Max.	
10	Power Consumption		21.6 W Max.	at 3.0 kPa 100 L/min Temperature: 23±5°C, Humidity: 45~85%RH, Air Pressure: 101.3 kPa
11	Minimum Flowrate		5 L/min	
12	Torque Constant		0.0025 N·m/A	

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No.	Item	Specification	Remarks
13	Rotation Speed Range	6,000~45,000 rpm	Rotation Speed = Hole Sensor Frequency×15
14	Acoustic Audible Noise	at 3.0 kPa 100 L/min Temperature:23±5°C, Humidity:45~85%RH, Air Pressure:101.3 kPa	Measured 1 m away from the intake vent (Including dark noise as 15 dB)
15	Coil Resistance	0.5 Ω	at 20°C (Between 2 phase)
16	Coil Inductance	20 μH	at 20°C, 10 kHz (Between 2 phase)
17	Insulation Class	E grade (JIS C 4003 Cable for Coil)	
18	Insulation Resistance	20 MΩ Min. between Coil terminal and Plate at 500 VDC(JIS C 4003)	
19	Insulation Pressure Resistance	Leak Current: 1 mA Max.	At min 600 VAC between coil terminal and plate more than one second
20	Weight	72 g (reference value)	
21	Rotor Inertia	19 g·cm ² (reference value)	
22	Operating Temperature And Humidity	-10~60°C、10~95%RH	Condensation may cause damage to product.
23	Storage Temperature Humidity range	-20~60°C、10~95%RH	Condensation may cause damage to product.
24	Operating Ambient Pressure	770~1,060 hPa	

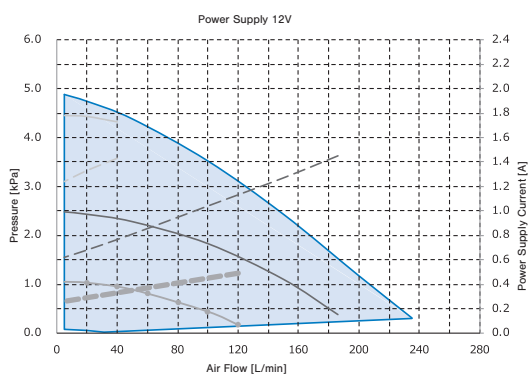
OPERATING RANGE IN P-Q & Q-I RATING

- 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.

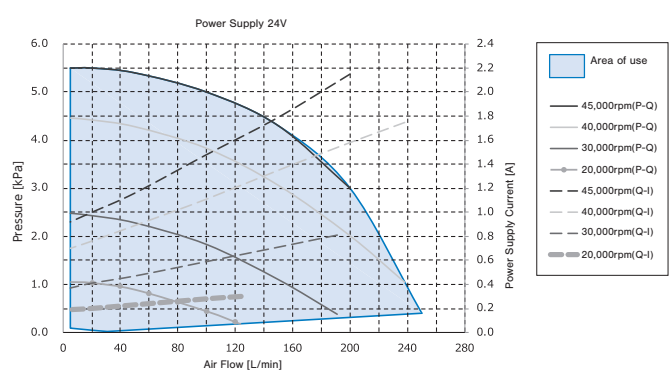
※ The characteristics below are measured with our company's driver at axis vertical position.

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

Characteristics at 12 V P-Q/Q-I



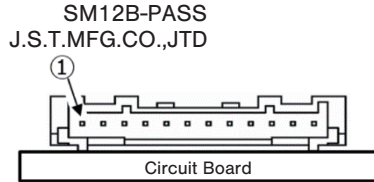
Characteristics at 24 V P-Q/Q-I



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CONNECTOR



HARNESS SIDE

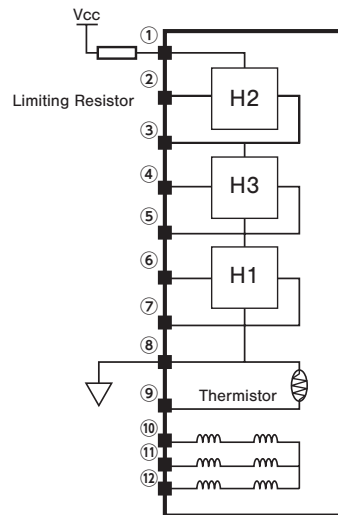
J.S.T.MFG.CO.,JTD SM12B-PASS	
Pressure Welding	12PAF-6S (Retainer: PAFS-12V-S)
Crimping	PAP-12V-S (Contact: SPHD-001T-P0.5)

- Both pressure welding and crimping are available.
- Recommended size: AWG#22

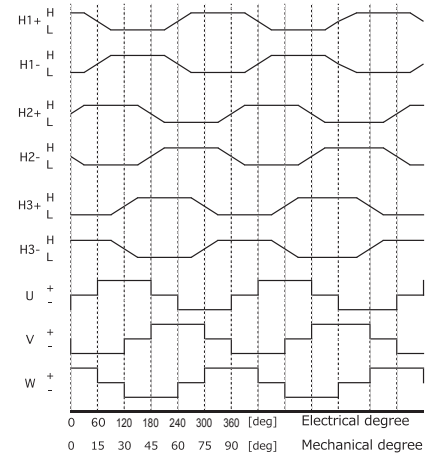
TERMINAL ARRAY

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

INTERNAL CIRCUIT / LIMITING RESISTOR



TIMING CHART



- The current into the hall sensor must be restricted within the rating listed below by using a resistor.

HALL SENSOR CHARACTERISTIC

Input Current	10 mA Max.	At maximum operating load at temperature 60°C
Input Resistance	250 ~ 450 Ω	Per one Hall sensor
Differential Output	300 mV p-p Min.	VH = (VH+)-(VH-) at 10 mA in Input current

• Equivalent of ASAHI KASEI Electronics HW-105A

THERMISTOR CHARACTERISTIC

Reference Resistance 25°C	10 kΩ
Operating Current 25°C	0.31 mA
B Constant[25/85°C]	4,100 K
Maximum Temperature	86°C (Thermistor Resistance: 0.97 kΩ)

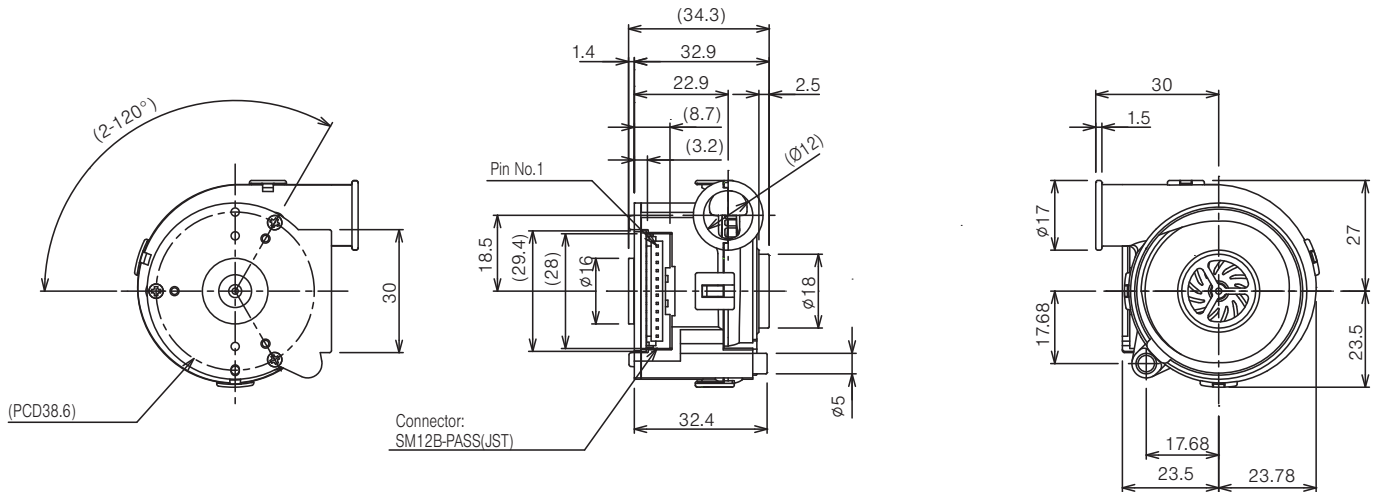
• Equivalent of TDK NTCG164BH103JT

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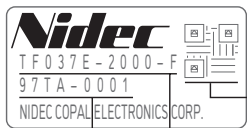
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OUTLINE DIMENSIONS

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



MARKING



QR code : Part Number, Lot No, Serial No

Part Number : TF037C-2000-F, TF037C-2100-F
 TF037E-2000-F, TF037F-2000-F

Lot No. : Year (Last two digit of year)
 Month (Table 1)
 Day (Table 2)
 Control Number (A to Z)

Serial No. : Index by LOT

[Table 1]

Month	1	2	3	4	5	6	7	8	9	10	11	12
No.	1	2	3	4	5	6	7	8	9	O	N	D

[Table 2]

Day	1	2	3	4	5	6	7	8	9	10
No.	1	2	3	4	5	6	7	8	9	A

Day	11	12	13	14	15	16	17	18	19	20
No.	B	C	D	E	F	G	H	J	K	L

Day	21	22	23	24	25	26	27	28	29	30	31
No.	M	N	P	Q	R	T	U	V	W	X	Y

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 (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)