

MICRO BLOWERS

TF037F

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		CCW (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.	at 3.0 kPa 100 L/min Temperature: 23±5°C, Humidity: 45~85%RH, Air Pressure: 101.3 kPa
10	Power Consumption		21.6 W Max.	
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	65 dB(A) 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.	JIS C 4003 At min 600 VAC between coil terminal and plate more than one second
20	Weight	72 g (reference value)	
21	Rotor Inertia	1.9×10^{-6} kg·m 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	

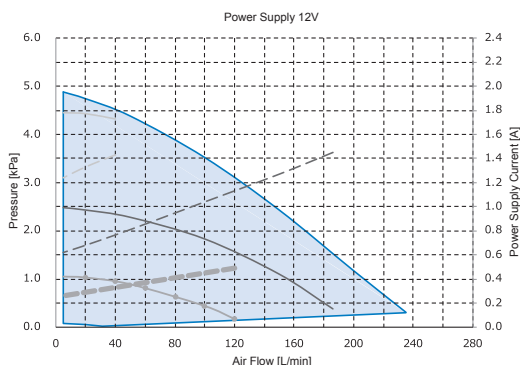
OPERATING RANGE IN P-Q & Q-I RATING

- 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.

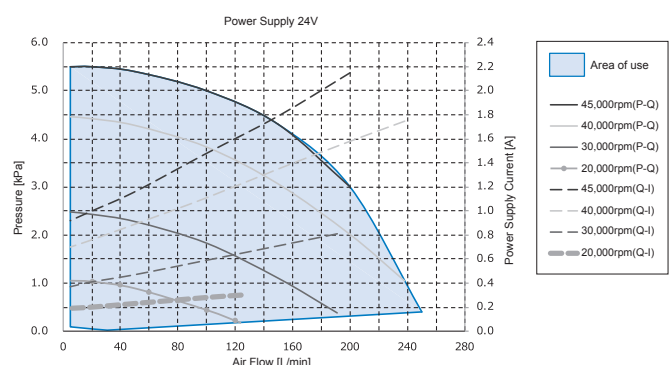
※ The characteristics below are measured with our company's driver at axis vertical position.

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

Characteristics at 12 V P-Q/Q-I



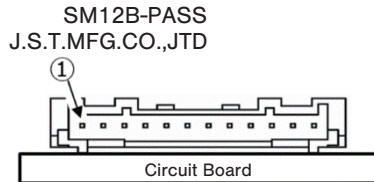
Characteristics at 24 V P-Q/Q-I



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CONNECTOR



HARNESS SIDE

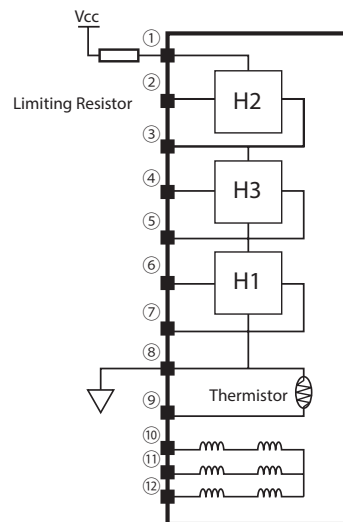
J.S.T.MFG.CO.,JTD SM12B-PASS	
Pressure Welding	12PAF-6S (Retainer:PAFS-12V-S)
Crimping	PAP-12V-S (Contact:SPHD-001T-P0.5)

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

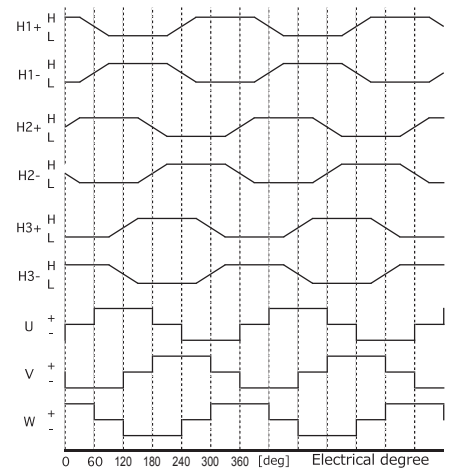
TERMINAL ARRAY

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

The Drivers are sold separately as an optional item.