

New

# TF029B

## MICRO BLOWERS

### FEATURES

- Compact / Light weight The smallest and lightest series
- Aerodynamic bearings
- 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	TF029B-1000-F	Remarks
1	Rated Voltage		DC 12 ~ 27 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 Blade	Without driving circuit
5	Type of Motor		DC Brushless Motor	
6	Number of Poles		4 Poles (2 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		36,000 r/min (reference value)	at 2.0kPa, 100L/min
12	Maximum Input Coil Current		2.0 A rms max.	
13	Rated Power Supply Current		0.62 A max.	at 2.0kPa, 100L/min, at 24V
14	Rated Power Consumption		14.9 W max.	
15	Rated Air Flow		100 L/min (at 2.0kPa)	at 2.0 kPa
16	Minimum Air Flow		100 L/min	

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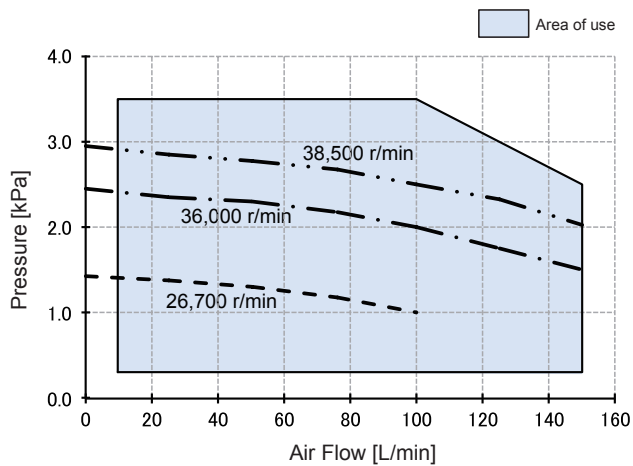
No.	Item	Part number	TF029B-1000-F	備考 Remarks
17	Rated Pressure		2.0 kPa	at 100 L/min
18	Maximum Pressure		3.5 kPa	absolute maximum pressure. at 24VDC
19	Torque Constant		0.0014 ~ 0.0020 N·m/A (reference value)	
20	Min. Rotation Speed		10,000 r/min	
21	Maximum Rotation Speed		50,000 r/min	Within the "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		0.37 ~ 0.49 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 shaft holder)	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	Weight		55 g (reference value)	
29	Rotor Inertia		10 g·cm <sup>2</sup> (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 <sup>2</sup> (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 <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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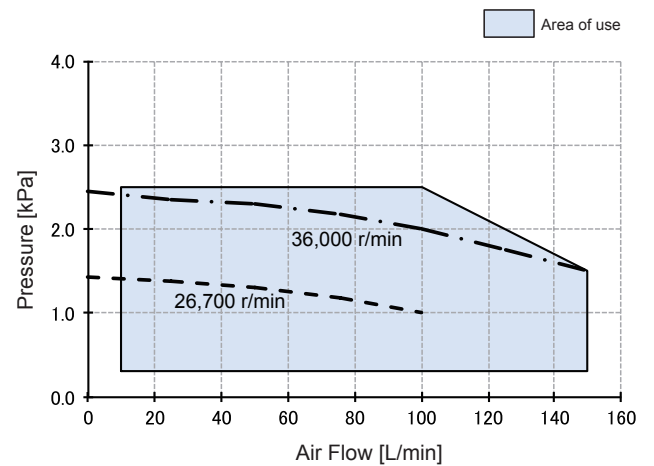
## MICRO BLOWERS

### P-Q CURVE CHARACTERISTICS

#### ● Operating Range at DC 24V (1atm)



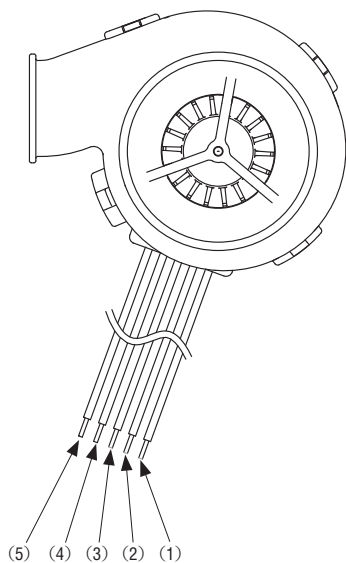
#### ● Operating Range at DC 12V (1atm)



※ Conditions: Ambient temperature  $23\pm 5^{\circ}\text{C}$ , normal humidity, atmospheric pressure ( $100\pm 2\text{kPa}$ ).  
The graphs above is provided for reference only. Values are not guaranteed.

※ Make sure the thermistor temperature does not exceed  $80^{\circ}\text{C}$  during blower operation. (Thermistor resistance value  $R(80\text{ deg C})=1.177\text{k}\Omega$ ).

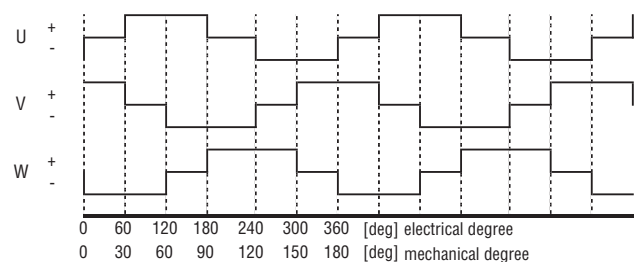
### INTERFACE



Pin No.	Symbol	Wire Color	Signal
1	U	Brown	Motor Coil (U)
2	V	Red	Motor Coil (V)
3	W	Orange	Motor Coil (W)
4	TH(-)	Yellow	Thermistor Output(-)
5	TH(+)	Green	Thermistor Output(+)

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

#### ● TIMING CHART

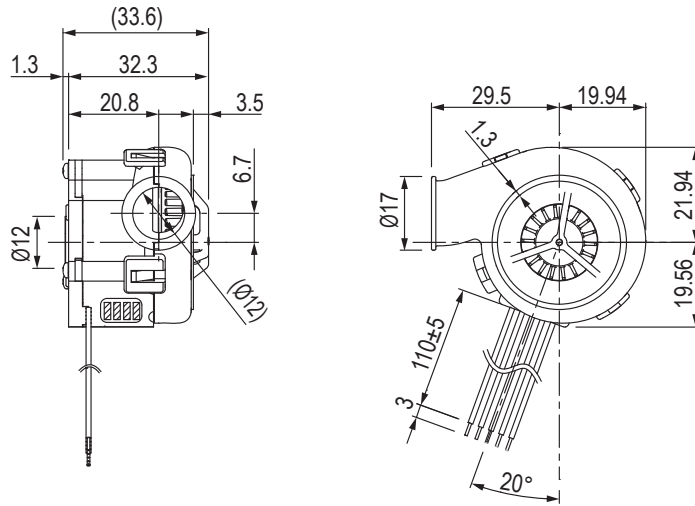


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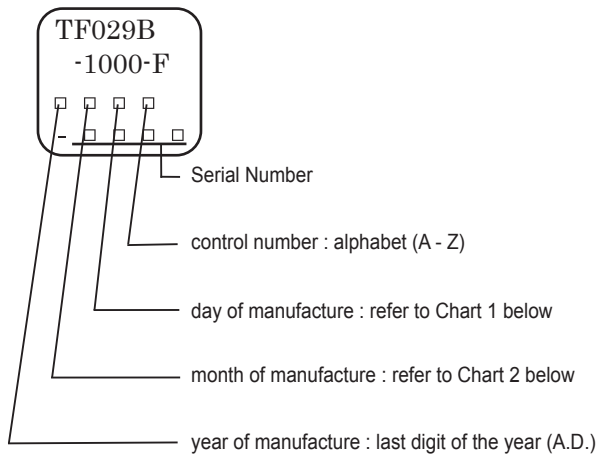
## MICRO BLOWERS

### OUTLINE DIMENSIONS

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



### MARKING



【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

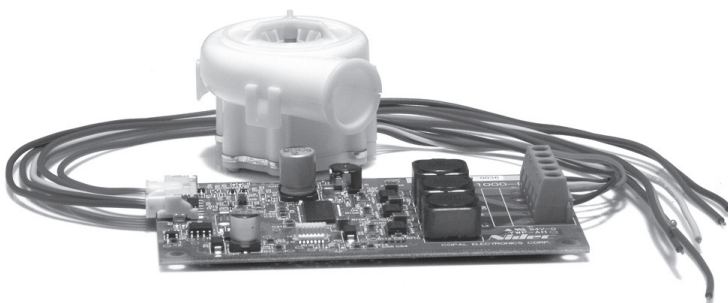
【Chart 2】

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 : TF029B-1000-P



List of the kit	
1	Micro Blower (TF029B-1000-F)
2	Driver (for TF029B)
3	Wire Harness (for Driver-Power connection)

The Drivers are sold separately as an optional item. (Ref.P435)