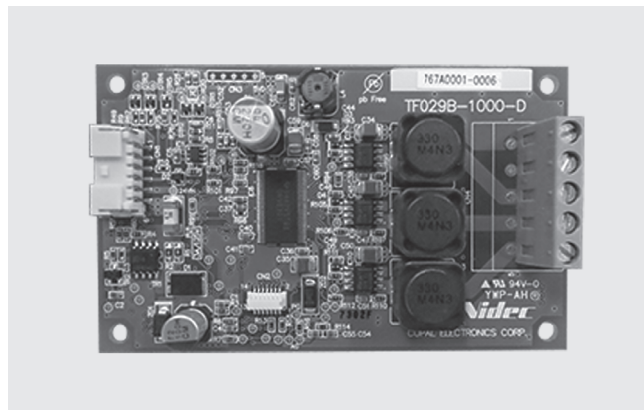


New

# TF029B-1001-D

## DRIVERS

Dedicated to the Micro Blower TF029 series.  
The drivers enable users to vary the speed of the motor by adjusting the control voltage of the external input.  
Contents of the kit are Driver board and Harness.  
Wire Harness: for Driver-Power connection



## STANDARD SPECIFICATIONS

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

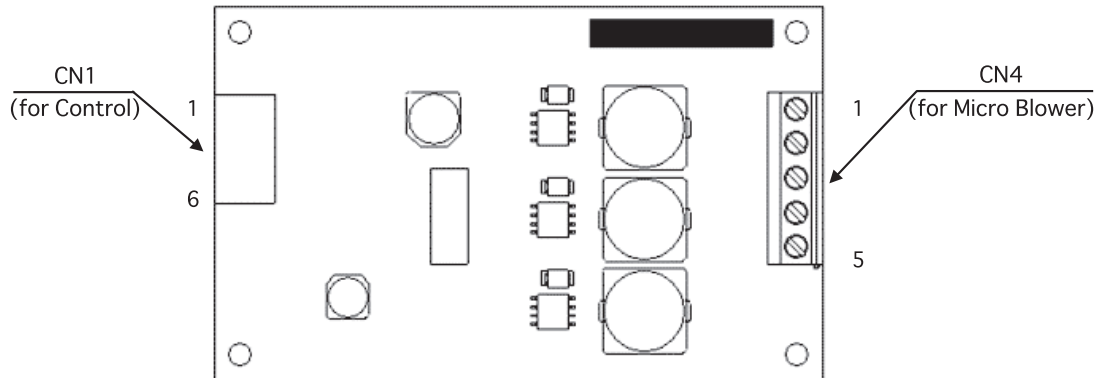
No.	Item	Specification		
1	Configuration	Drivers(Dedicated to the Micro Blower TF029 series)		
2	Rotational Speed	36,000 r/min (reference value) at 2.0kPa, 100L/min		
3	Power Consumption	14.9W max. at 2.0kPa, 100L/min		
4	Rated Voltage	DC 24 V±10%		
5	Max. Input Current	2.0 A max.(DC) (Excluding inrush current)		
6	Readiness time	5sec max. From power on to motor start		
7	Running Current	0.62 A max. at 2.0kPa, 100L/min		
8	Weight	40 g max.		
9	Operating Temperature	-10~ 50 °C		
10	Operating Humidity Range	10~ 90 %RH (No condensation)		
11	Storage Temperature	-20~ 60 °C		
12	Storage Humidity Range	10~ 90 %RH (No condensation)		
13	Resistance to Vibration	To meet the Spec after the following test		Non-operating
		Kind of Vibration	Sweep	
		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			
14	Resistance to Shock	To meet the Spec 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	

# TF029B-1001-D

## MICRO BLOWER DRIVERS

### INTERFACE

【Driver Board】



【CN1 : Connector for Control】

Manufacturer	J.S.T. Mfg. Co., Ltd.
Part No.	SM06B-PASS

【CN4 : Connector for Micro Blower】

Manufacturer	Phoenix contact
Part No.	1729157

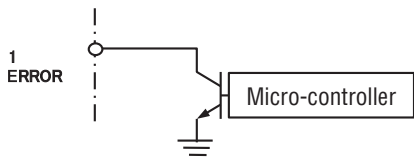
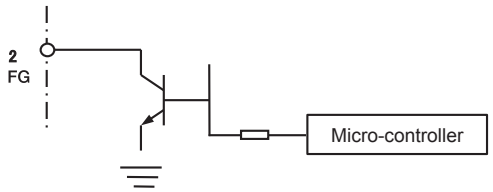
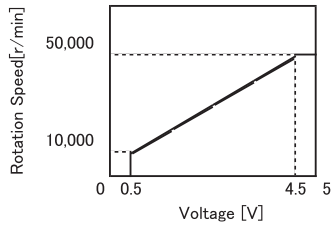
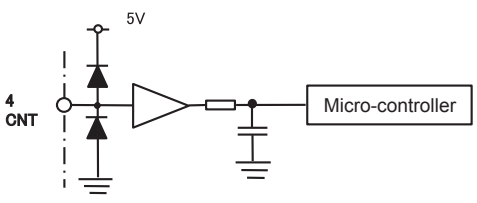
Pin No.	Symbol	Signal
1	Error	Error Output
2	FG	Rotational Speed Signal Output (FG)
3	BR	Short brake Input
4	CNT	Control Voltage Input
5	Vcc	Power Supply Voltage Input
6	GND	GND

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

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## MICRO BLOWER DRIVERS

### ■ CN1(CONNECTOR FOR CONTROL) SPECIFICATIONS

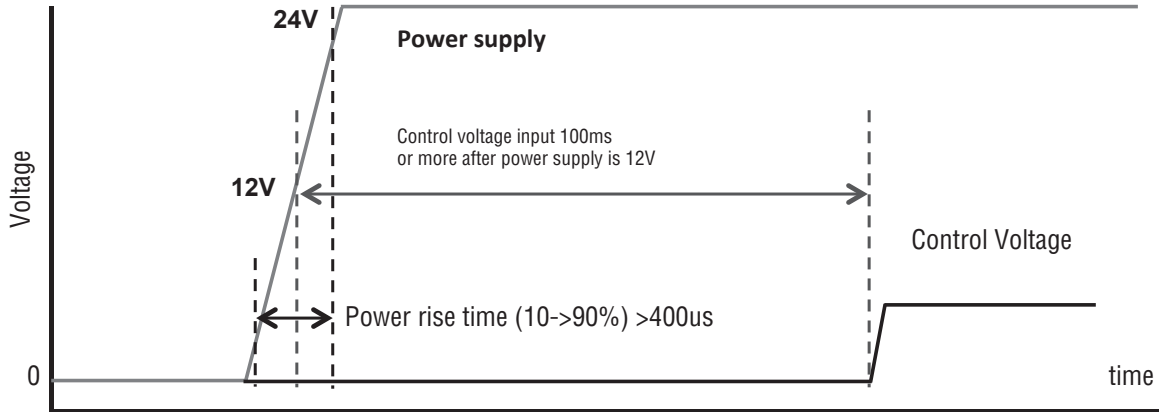
Pin No.	Input/output	Signal name	Specification
1	出力	Error	<p>Error Output            Low= Detection            High= Undetected            Open Collector Output            (Max. Voltage : 10V,Max. Current : 10mA)</p> 
2	出力	FG	<p>Rotational Speed Signal Output(FG)            Open Collector Output            (Max. Voltage :10V,Max Current : 10mA)            FG signal 1 pulse = 10rev</p> 
3	—	NC	Not Connected
4	入力	CNT	<p>Control Voltage Input            (-0.5 ~ 5.5V)            Input voltage range            (0.5 ~ 4.5V)            Valid control voltage            For CNT signal vs motor speed, refer to below</p>  <p>CNT signal vs motor speed</p> 
5	—	VIN	Power Supply
6	—	GND	GND

# TF029B-1001-D

## MICRO BLOWER DRIVERS

### POWER SUPPLY, CONTROLLER VOLTAGE INPUT

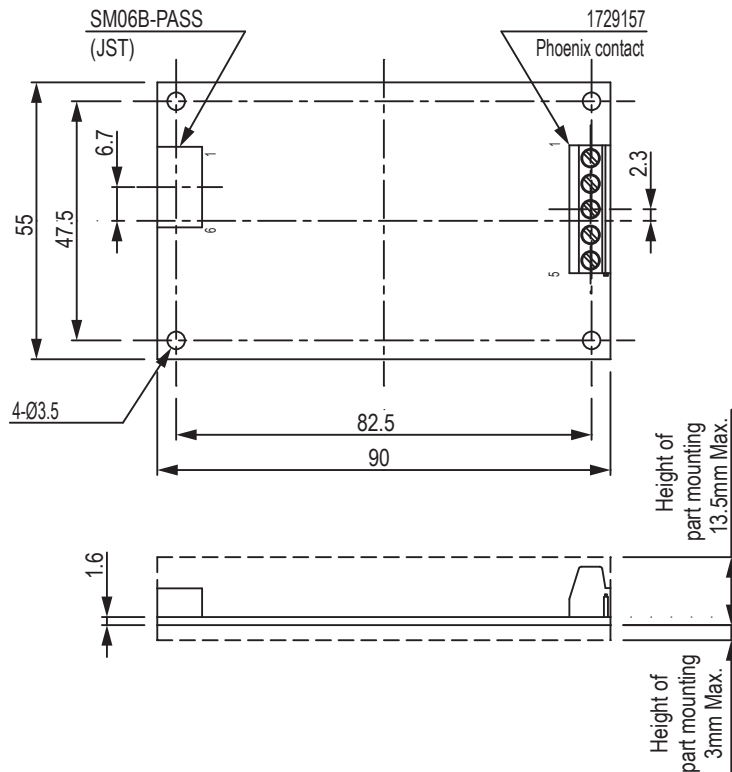
To avoid high inrush current and protect driver, follow below chart at power up and CNT signal input sequence



- ① Keep power rise time(10 → 90%) is more than 400us. If high rate power is applied, inrush current will be so huge.
- ② Wait more than 100ms after power exceeds 12V to apply CNT signal.

### OUTLINE DIMENSIONS

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



# TF029B-1001-D

## MICRO BLOWER DRIVERS

### PROTECTIVE FUNCTIONS

Protective Functions	Description
Over voltage	If over voltage detected at power line, Blower will be stopped. Recover: Check and correct supply voltage.
Over current	When power line current exceeds 3A, fuse will be opened and cut off power. Recover: Contact with us.
High temperature	When high Turbo Fan internal temperature, outputs error signal and turn it off. If error is detected, LED will blink at 1Hz Recover: Wait until it's cooled down and try again. (If not solved, contact with us.)
Over speed	When motor speed exceeds limit, outputs error signal and turn it off. If error is detected, LED will blink at 1Hz Recover: Reduce CNT signal voltage and try again.(If not solved, contact with us.)
Over current at motor coil	When motor coil current exceeds limit, outputs error signal and turn it off. Recover: Check motor operation condition.
Abnormal voltage of supplied power	When power supply voltage exceeds limit, outputs error signal and turn it off. If error is detected, LED will blink at 1Hz Recover: Check power supply voltage and try again
Abnormal operation	When any failure is detected on driver, outputs error signal and turn it off. If error is detected, LED will blink at 4Hz Recover: Check power supply voltage and try again.(If not solved, contact with us)

Normal operation : Green LED is ON. (Red is OFF.)

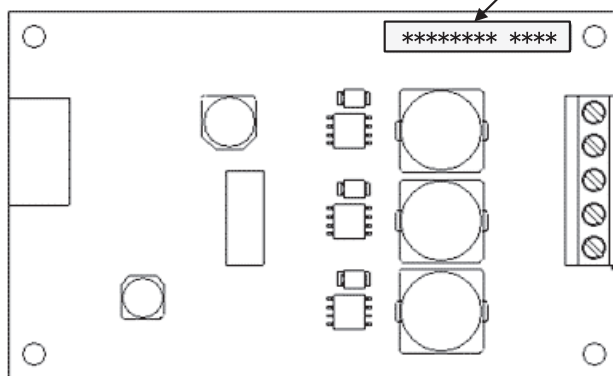
Abnormal condition : Red LED is blinking. (Green is turned off.)

# TF029B-1001-D

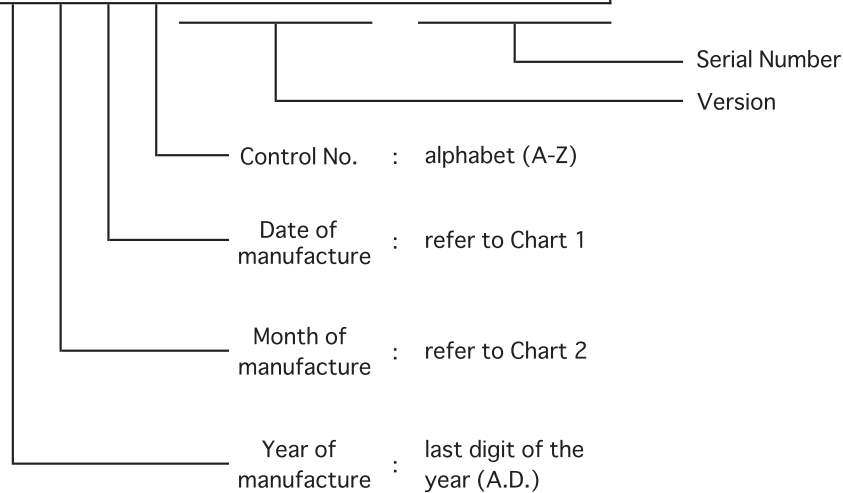
## MICRO BLOWER DRIVERS

### MARKING

【Driver Board】 Label position



7 6 1 A X X X X - X X X X



【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