Brushless DC Fans & Blowers

**TUDC series **

**DC Axial Fan TUDC**

■ Standard specification

<table>
<thead>
<tr>
<th>Max. Airflow m³/min</th>
<th>Max. Static Pressure (Pa)</th>
<th>Noise (dBA)</th>
<th>Speed (rpm)</th>
<th>Input Power (W)</th>
<th>Voltage Spec. V</th>
<th>Current mA</th>
<th>Model Code</th>
<th>Operating Temp. Range °C</th>
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■ General specification

- **Materials Used**
  - Venturi: ABS and PBT synthetic resins
  - Propeller: ABS and PBT synthetic resins
  - Bearing: Both side shielded ball bearing

- **Motor**
  - Brushless DC motor, Protection type: Current shut off by detecting lock state, automatically reset

- **Common Elec. Spec.**
  - See pages G-11, G-12, G-13.

- **Standard Carton**
  - 100 to a carton of (450 x 380 x 160) mm, mass 9 kg

- **Rated Vol.**
  - 12 V: TUDC12D4S, TUDC12B4S
  - 24 V: TUDC24D4S, TUDC24B4S
  - 48 V: TUDC48D4S

■ Standard airflow and static pressure characteristics (At rated voltage)

- **[By double chamber method]**

- **Wiring connection diagram**

- **DC axial fan with sensor**

- **Mounting hole dimensions (Recommendation)**

- **External dimensions (in mm (inches))**

- **Fan model code**

- **Fan & Blowers**

- **Blowers**

- **Centrifugal**

- **Axial**

- **Axial Fans**

- **Option**

- **Component**

- **Variables**

- **Sensor**

- **Specifications**

- **Options**

- **G-15**

- **G-64**

- **www.nidec-servo.com 2016**

- **Sensor Spec.**

- **Options**

- **G-15**

- **G-64**
Guards (Options)

F60P Guard (Mass 4 g)
- Material: Polycarbonate (black) UL94V-2
- Surface treatment: Nickel chromium plating

F60UL Guard (Mass 12 g)
- Material: Mild steel wire 1.6 dia.
- Surface treatment: Nickel chromium plating

F80UL Guard (Mass 14 g)
- Material: Mild steel wire 1.6 dia.
- Surface treatment: Nickel chromium plating

F92UL Guard (Mass 16 g)
- Material: Mild steel wire 1.6 dia.
- Surface treatment: Nickel chromium plating

F120UL Guard (Mass 29 g)
- Material: Mild steel wire 1.6 dia.
- Surface treatment: Nickel chromium plating

F127UL Guard
- Material: Mild steel wire 1.6 dia.
- Surface treatment: Nickel chromium plating

GUARD 172
- Material: Mild steel wire 2 dia.
- Surface treatment: Nickel chromium plating

F180UL Guard
- Material: Mild steel wire 1.6 dia.
- Surface treatment: Nickel chromium plating

F200UL Guard (Mass 82 g)
- Material: Mild steel wire 1.6 dia.
- Surface treatment: Nickel chromium plating

List of mating fan series

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<th>Guard</th>
<th>F60 UL</th>
<th>F80 UL</th>
<th>F82 UL</th>
<th>F120 UL</th>
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</table>

*1: Can be installed only on outlet side.  *2: Can be installed only on intake side.

All guards conform to the UL standard when combined with NIDEC SERVO fans.
The installation of a filter, guard and other accessories will constitute a ventilating load,
reducing the airflow. Select a suitable guard, taking into consideration the increase in air
resistance. (See Figs. 12 and 13 on page G-7.)
DC fans and blowers of NIDEC SERVO have a function to send an alarm signal when the fan motor revolutions slow down. Several systems are used to cut off the system power supply by this alarm signal, with three types of sensors available. Select the right type of sensor in accordance with the purpose of use. The lead wire for the sensor is yellow. The output type is an open collector output for all three types.

Sensor type

1. Lock detection type (Product code: S)

The output signal indicates an [L] state (transistor is ON) while the propeller is rotating, changing to an [H] state (transistor is OFF) less than five seconds after the propeller stops rotating. The propeller automatically restarts operation within five seconds when the lock is unlocked. ([H] → [L] 5 s). If the pull-up voltage is live, the [H] state (transistor is OFF) will engage in less than five seconds, even when the power is turned off.

- Specification: \( V_{CC} = 28 \, V \) max (55.2 \( V \) max for 48 \( V \) products)
- \( I_C = 5 \, mA \) max
- \( (V_{CE(SAT)} = 0.4 \, V \) max)

2. Pulse output type (Product code: P)

A rectangular wave of two pulses will be output for each turn of the propeller while the propeller is rotating, outputting two types of signal depending on the propeller position when the propeller is locked. (See the note below)

- Specification: \( V_{CC} = 28 \, V \) max (55.2 \( V \) max for 48 \( V \) products)
- \( I_C = 5 \, mA \) max
- \( (V_{CE(SAT)} = 0.4 \, V \) max)

3. Speed detection type (Product code: Q)

The output signal indicates the [H] state when the propeller revolutions are slower than the preset speed, changing to the [L] state when the propeller revolutions exceed the reset speed.

- Specification: \( V_{CC} = 28 \, V \) max (55.2 \( V \) max for 48 \( V \) products)
- \( I_C = 5 \, mA \) max
- \( (V_{CE(SAT)} = 0.4 \, V \) max at 5 mA)

Note: The output waveform for type SQ (R) will be reversed. The speed setting for the alarm output is about half the rated speed. For more detailed information, please request a product delivery specification from NIDEC SERVO.