

## Standards and Specifications of Model: FD4028B12W11-3R

### A. General Specification

| Item                                        | Specification / Standard / Condition    |                                                                                                             |
|---------------------------------------------|-----------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Outline Dimension                           | 40 mm x 40 mm x 28 mm                   |                                                                                                             |
| Bearing                                     | Dual Ball Bearing                       |                                                                                                             |
| Rated Voltage                               | DC 12 V                                 | Tolerance: $\pm 10\%$                                                                                       |
| Starting Voltage                            | DC 6 V                                  | 1. Rated Voltage<br>2. 25°C, 65% RH                                                                         |
| Rated Current                               | 0.26 A                                  |                                                                                                             |
| Power Consumption                           | 3.12 W                                  |                                                                                                             |
| Speed                                       | 11,500 R.P.M.                           | 1. Free Air<br>2. Rated Voltage<br>3. 25°C, 65% RH<br>4. Tolerance: $\pm 10\%$                              |
| Maximum Airflow                             | 14.7 CFM                                | 1. Rated Voltage<br>2. AMCA Standard<br>3. Rated Current                                                    |
| Maximum Static Pressure                     | 18.0 mm-H <sub>2</sub> O                |                                                                                                             |
| Noise Level                                 | 44.0 dB (A)                             | 1. Rated Voltage<br>2. Measured in a Non-Echo Chamber<br>3. CNS 8753 Standard<br>4. ISO 3744 Test Condition |
| Life                                        | 75,000 hrs 40°C                         | MTTF (Mean Time to Failure Conf. Level 90%)                                                                 |
| Number of Blade                             | 5 Blades                                |                                                                                                             |
| Number of Pole                              | 4 Poles                                 |                                                                                                             |
| Rotating Direction                          | Counter-Clockwise                       |                                                                                                             |
| Plastic Material:<br>Blade, Housing, Bobbin | 1. UL 94V-0<br>2. P.B.T. + 30% GF Black |                                                                                                             |
| Lead Wire                                   | UL1007, 26 AWG                          | Red: (+) Black: (-)<br>Yellow: Tachometer                                                                   |
| Connector                                   |                                         |                                                                                                             |

### B. Electrical Specification

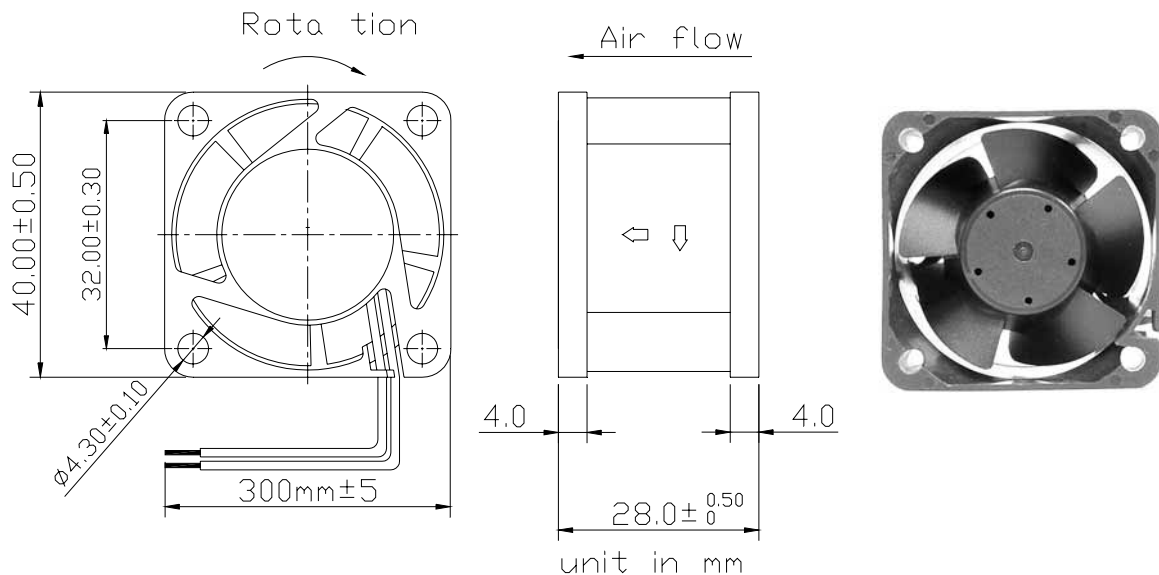
| Item                    | Specification / Condition                                                                                                     |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| Locked Rotor Protection | a. Auto power off after locked at rated voltage for 1 sec.<br>b. After auto power off, circuit attempt to restart in 2-6 sec. |
| Polarity Protection     | Circuit is protected when V <sub>CC</sub> & GND are exchanged.                                                                |
| Insulation Resistance   | 10 m.Ohm / between unshielded wire and frame at 500 VDC/min.                                                                  |
| Dielectric Strength     | 5 mA Maximum. / Measured between lead wire + and frame at 500 VAC/min.                                                        |

**C. Environmental Specification**

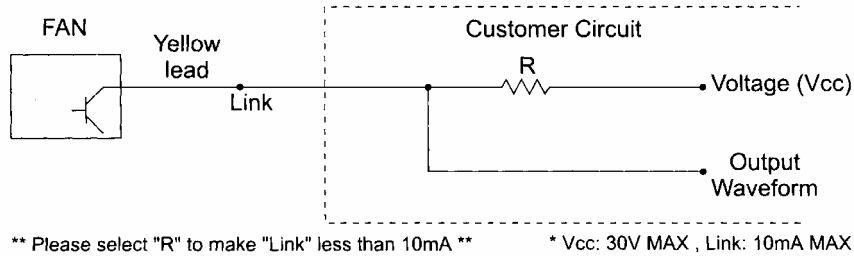
| Item                     | Specification / Condition                                                                                   |
|--------------------------|-------------------------------------------------------------------------------------------------------------|
| Operating Condition      | Temperature: $-10^{\circ}\text{C} \sim +70^{\circ}\text{C}$<br>Humidity: 35% ~ 85% RH                       |
| Storage Temperature      | Temperature: $-10^{\circ}\text{C} \sim +70^{\circ}\text{C}$<br>Humidity: 35% ~ 85% RH                       |
| Humidity                 | Per MIL-STD-202F Method 103B<br>Life: 96 hours<br>Humidity: 95%<br>Temperature: $+40 \pm 2^{\circ}\text{C}$ |
| Thermal Shock            | Per MIL-STD-202F Method 107D, Condition D                                                                   |
| Packing Vibration Test   | Packing condition: X, Y, Z 3 directions, 1.1G load vibration test for 30 min.                               |
| Packing Shock Proof Test | 1 corner, 3 edges, 6 faces natural drop from 60cm high, packed                                              |

**D. Safety Approvals**

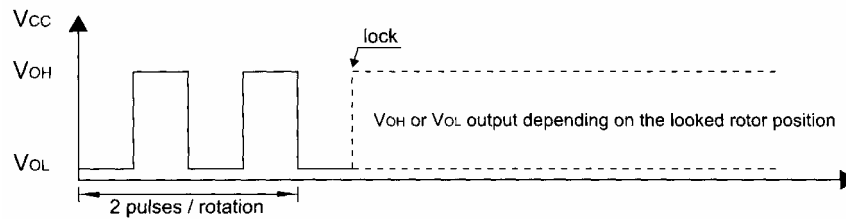
| Safety Approval | File No. |
|-----------------|----------|
| UL              | E194726  |
| CUL             | E194726  |
| TUV             | R2054644 |

**E. Model Drawing**

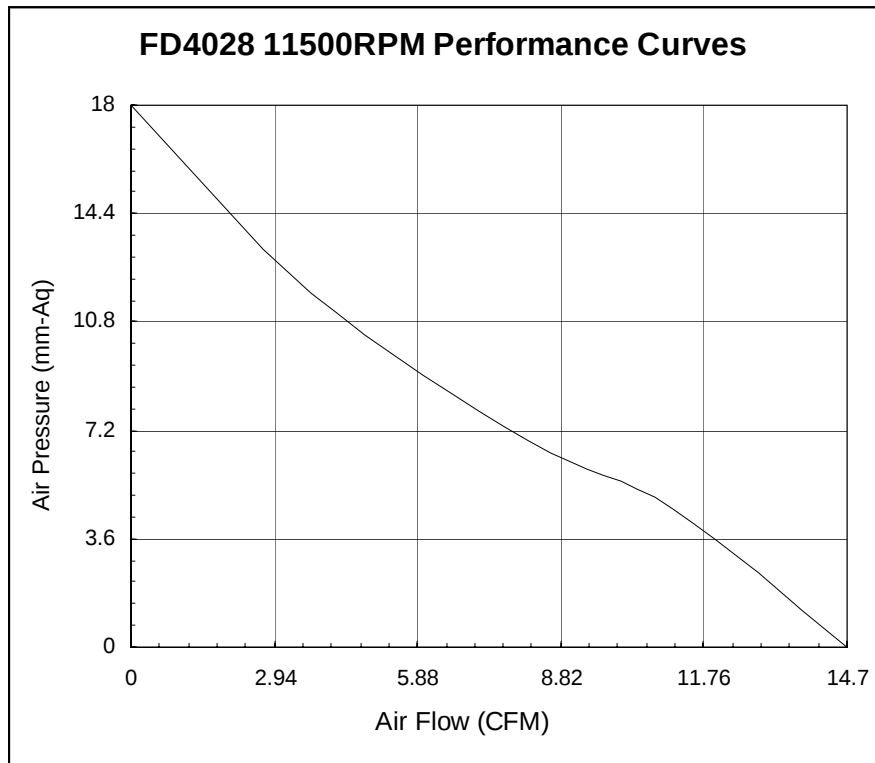
**F. Tachometer (Speed Sensor)**



**Output Waveform**



**G. Air Flow Performance Curve**



#### H. MTF Curve

