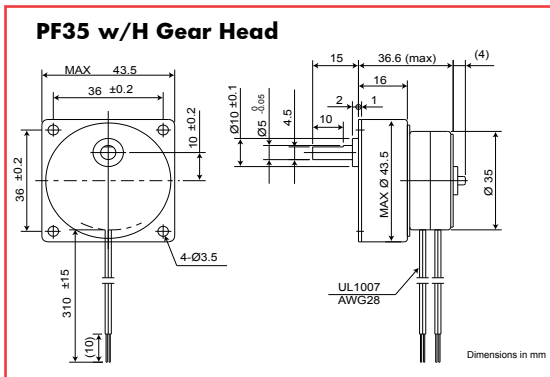


## Specifications

| Specification         | Unit              | PF35-24                |     |         |    | PF35-48                |     |         |    |
|-----------------------|-------------------|------------------------|-----|---------|----|------------------------|-----|---------|----|
|                       |                   | Unipolar               |     | Bipolar |    | Unipolar               |     | Bipolar |    |
| Type of Winding       |                   | Unipolar               |     |         |    | Bipolar                |     |         |    |
| Excitation Mode*      |                   | Full step (2-2)        |     |         |    | Full step (2-2)        |     |         |    |
| Step Angle            | °                 | 15 ±5%                 |     |         |    | 7.5 ±5%                |     |         |    |
| Steps Per Revolution* |                   | 24                     |     |         |    | 48                     |     |         |    |
| Rated Voltage         | V                 | 12                     | 5   | 12      | 5  | 12                     | 5   | 12      | 5  |
| Resistance            | Ω                 | 90                     | 16  | 100     | 17 | 90                     | 16  | 100     | 17 |
| Inductance            | mH                | 48                     | 8.9 | 95      | 14 | 48                     | 8.9 | 124     | 19 |
| Holding Torque        | mN·m              | 15                     | 15  | 19      | 19 | 20                     | 20  | 25      | 25 |
| Rotor Inertia         | kg·m <sup>2</sup> | 4.5 x 10 <sup>-7</sup> |     |         |    | 4.5 x 10 <sup>-7</sup> |     |         |    |
| Starting Pulse Rate*  | pps               | 310                    |     |         |    | 500                    |     |         |    |
| Slewing Pulse Rate*   | pps               | 410                    |     |         |    | 530                    |     |         |    |
| Operating Temp. Range | °C                | -10 to +50             |     |         |    | -10 to +50             |     |         |    |
| Temperature Rise*     | °C                | 55                     |     |         |    | 55                     |     |         |    |
| Weight                | g                 | 80                     |     |         |    | 80                     |     |         |    |

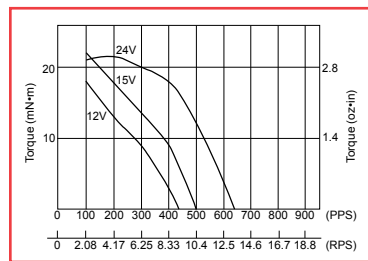
## Dimensions of Geared Model



| Gear Ratio     | 1/5     | 1/6   | 1/10  | 1/18    | 1/30  |       |       |
|----------------|---------|-------|-------|---------|-------|-------|-------|
| Maximum Torque | 100mN·m |       |       | 200mN·m |       |       |       |
| Gear Ratio     | 1/40    | 1/50  | 1/60  | 1/75    | 1/90  | 1/100 | 1/120 |
| Maximum Torque | 300mN·m |       |       |         |       |       |       |
| Gear Ratio     | 1/125   | 1/150 | 1/180 | 1/200   | 1/270 | 1/300 |       |
| Maximum Torque | 600mN·m |       |       |         |       |       |       |

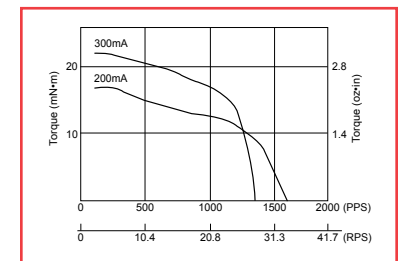
## Torque Curve (pull-out torque)\*

Bipolar Constant Voltage (48P1)



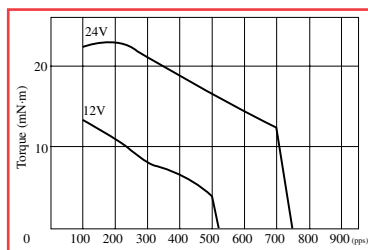
Coil Resistance: 100Ω

Bipolar Constant Current (48I181)



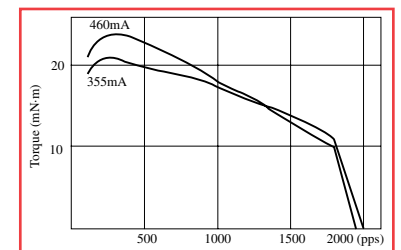
Coil Resistance: 18Ω Supply Voltage: 24V

Unipolar Constant Voltage (48C1)



Coil Resistance: 90Ω

Unipolar Constant Current (24D1)



Coil Resistance: 20Ω Supply Voltage: 24V

\* - All tin-can motor specifications are based on full-step constant voltage operation  
Magnet type: Anisotropic

Note: Torque curves are for reference only and are not guaranteed.