

**MDH(12)-40 Series**

- Direct Drive Brushless AC Servo
- 40mm diameter, 3 stack lengths
- Incremental encoder
- 12mm hollow shaft



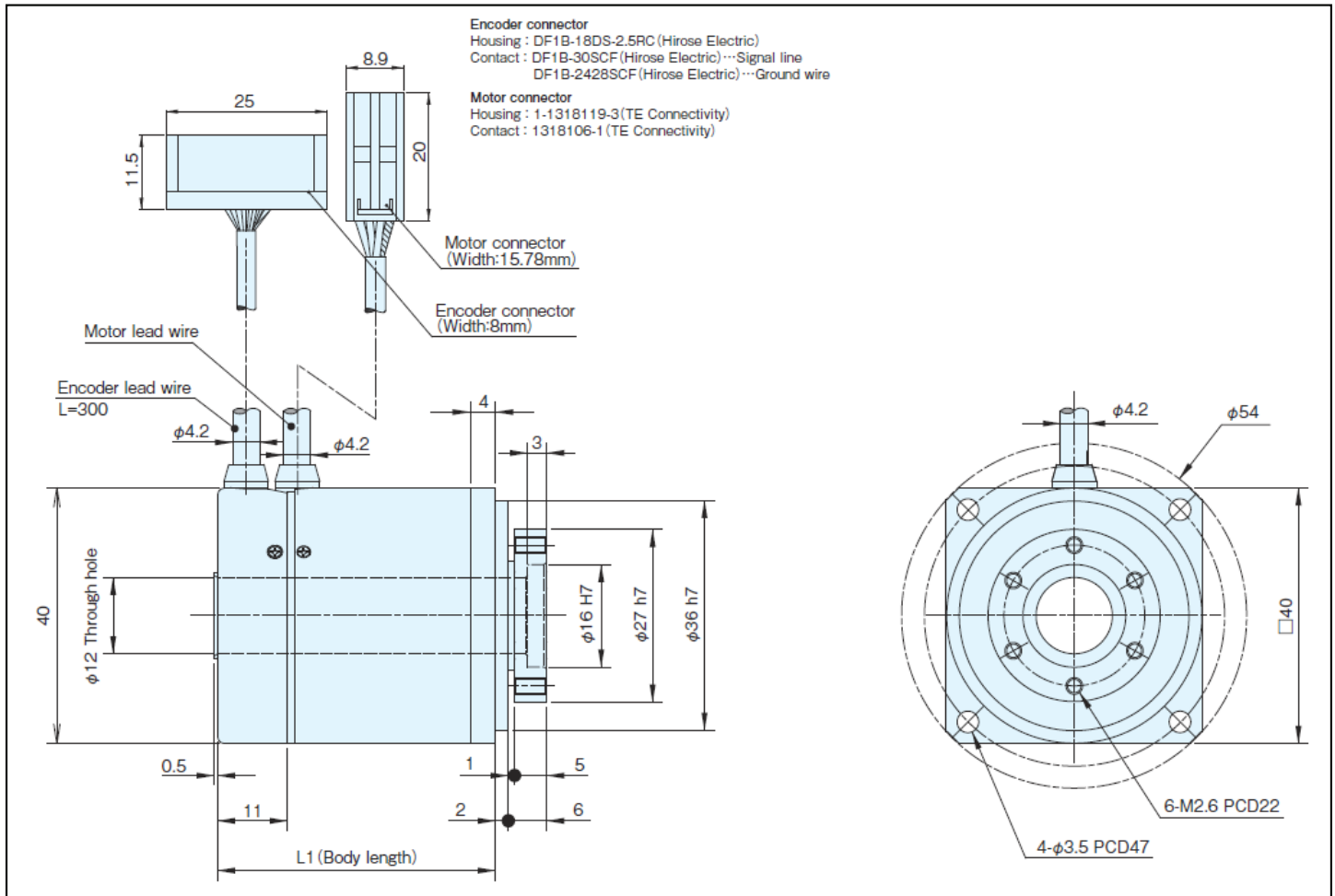
Visit [nipponpulse.com](http://nipponpulse.com) to download 3D CAD drawings and 2D prints of this motor.

| Specifications                     | Unit              | MDH(12)-4006                             | MDH(12)-4012 | MDH(12)-4018 |
|------------------------------------|-------------------|--|--------------|--------------|
| Max Torque                         | Nm                | 0.33                                     | 0.70         | 1.0          |
| Rated Torque                       | Nm                | 0.12                                     | 0.20         | 0.28         |
| Continuous Rated Torque            | Nm                | 0.10                                     | 0.16         | 0.23         |
| Max Speed                          | rpm               | 450                                      |              |              |
| Rated Speed                        | rpm               | 450                                      |              |              |
| Max Encoder Resolution             | P/R               | Incremental: 1,296,000 (multiplied by 4) |              |              |
| Input Power (driver input)         | VDC               | 24/48                                    |              |              |
| Peak Power                         | W                 | 14                                       | 27           | 40           |
| Peak Armature Current              | Arms              | 6.3                                      | 7.5          | 10           |
| Rated Armature Current*            | Arms              | 1.6                                      | 1.7          | 2.3          |
| Voltage Constant                   | V/krpm            | 6.1                                      | 10           | 11           |
| Torque Constant (at 25°C)          | Nm/Arms           | 0.058                                    | 0.096        | 0.10         |
| Line Armature Resistance (at 25°C) | Ω                 | 2.6                                      | 2.5          | 1.7          |
| Line Armature Inductance           | mH                | 2.6                                      | 3.0          | 2.0          |
| Rotor Poles                        | P                 | 16                                       |              |              |
| Moment of Inertia (J)              | g·cm <sup>2</sup> | 49.8                                     | 64.6         | 79.4         |
| Permissible Radial Load (Fr)       | N                 | 140                                      |              |              |
| Permissible Axial Load (Fa)        | N                 | 70                                       |              |              |
| Mass                               | kg                | 0.21                                     | 0.26         | 0.30         |
| Standard Heatsink                  |                   | 150 x 150 x 8 Aluminum                   |              |              |

\* Rated armature current is the value measured with the standard heatsink attached to the motor at an ambient temperature of 40°C.

| Encoder     | Base Resolution | Interpolation Factors                | Max. Resolution (post quad) |
|-------------|-----------------|--------------------------------------|-----------------------------|
| Incremental | 1125<br>2250    | 2, 4, 5, 8, 10, 16, 20, 32<br>20, 32 | 144,000<br>288,000          |

# MDH(12)-40XX Dimensions



## Standard Models

- MDH(12)-40 $\Delta$ -324KE (Incremental)

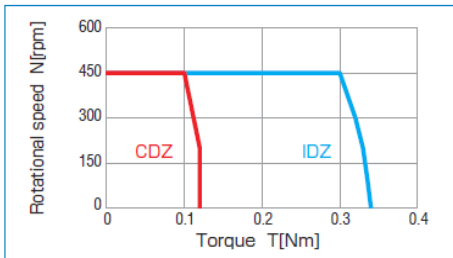
$\Delta$  = stack length indicator  
 06, 12, 18

| Model        | Stack Length (L1) |
|--------------|-------------------|
| MDH(12)-4006 | 31.5 mm           |
| MDH(12)-4012 | 37.5 mm           |
| MDH(12)-4018 | 43.5 mm           |

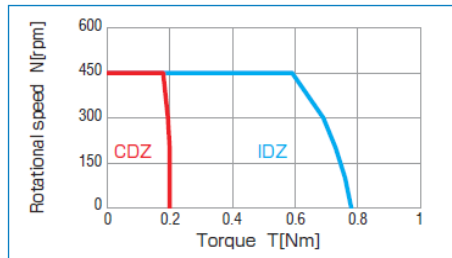
see drawings of motor dimensions on next page

## Performance Curves

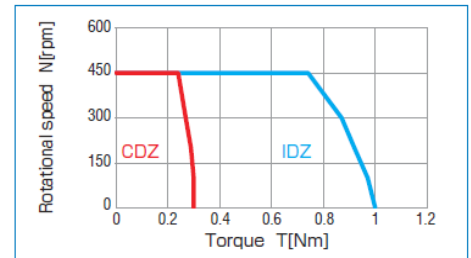
### MDH(12)-4006



### MDH(12)-4012



### MDH(12)-4018



CDZ = Continuous Duty Zone, IDZ = Intermittent Duty Zone

Performance curve based on MCC Drive, 24VDC input power

For assistance in selecting the best motor for your application, contact Nippon Pulse to speak with an applications engineer. 1-540-633-1677