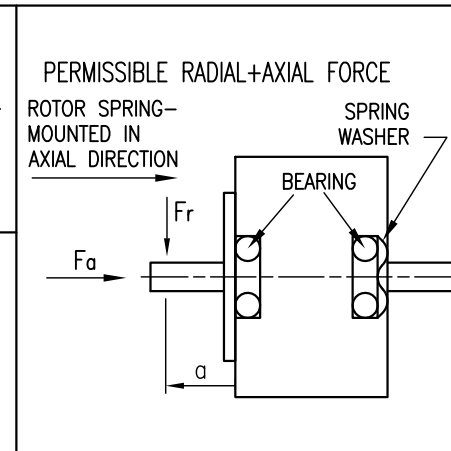
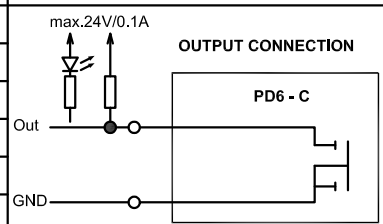
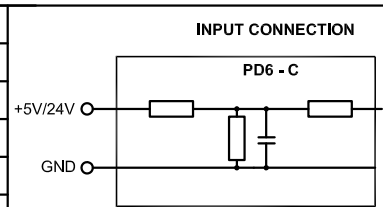


⬅ : Axial play is below 0.2mm at 250N force.

| X1 Power Connector |              |
|--------------------|--------------|
| Pin No.            | Function     |
| 1                  | +UB (12-48V) |
| 2                  | GND          |

| X4/X5 CANopen IN/OUT |                 |
|----------------------|-----------------|
| Pin No.              | Function        |
| 1                    | CAN_H           |
| 2                    | CAN_L           |
| 3                    | CAN_GND         |
| 4                    | n.c.            |
| 5                    | n.c.            |
| 6                    | CAN_SHLD        |
| 7                    | GND             |
| 8                    | +UB Logic (24V) |

| SPECIFICATION                       | CONNECTION | STAR          |
|-------------------------------------|------------|---------------|
| NO. OF POL./PHASE                   |            | 8/3           |
| VOLTAGE RATED (VDC)                 |            | 48            |
| CURRENT RATED/PEAK (AMP)            |            | 6.5/20        |
| RESISTANCE/PHASE-PHASE (Ohms) @25°C |            | 0.34±15%      |
| INDUCTANCE/PHASE-PHASE (mH) @1KHz   |            | 1.0±20%       |
| TORQUE RATED/PEAK (Nm)              |            | 0.70/2.1      |
| TORQUE CONSTANT (Nm/A)              |            | 0.107         |
| POWER RATED (W)                     |            | 220           |
| SPEED RATED/NO LOAD (RPM)           |            | 3000/4500±10% |
| ROTOR INERTIA (g.cm <sup>2</sup> )  |            | 800           |
| WEIGHT (Kg)                         |            | 2.0           |



|                        |          |      |
|------------------------|----------|------|
| AXIAL-FORCE $F_a$ (N)  | $F_a=60$ |      |
| DISTANCE $a$ (mm)      | 20       |      |
| RADIAL-FORCE $F_r$ (N) | 220      |      |
| SHAFT PLAY (mm)        | AXIAL    | 0.2  |
|                        | RADIAL   | 0.02 |
| AT LOAD MAX: (N)       | 250      | 4.5  |

| X2 IO Connector |                                    |                      |
|-----------------|------------------------------------|----------------------|
| Pin No.         | Function                           |                      |
| 1               | +10V VOLTAGE SUPPLY (max. 200mA)   |                      |
| 2               | Input 1/ Enable (5V/24V)           | -Input1/ -Enable*    |
| 3               | Input 2/ Direction (5V/24V)        | Input1/ Enable*      |
| 4               | Input 3/ Clock (5V/24V)            | -Input2/ -Direction* |
| 5               | Input 4 (5V/24V)                   | Input2/ Direction*   |
| 6               | Input 5 (5V/24V)                   | -Input3/ -Clock*     |
| 7               | Input 6 (5V/24V)                   | Input3/ Clock*       |
| 8               | Analog Input1 (0-10V/0-20mA)       |                      |
| 9               | Analog Input2 (0-10V)              |                      |
| 10              | Output1 (open drain) $\triangle/B$ |                      |
| 11              | Output2 (open drain) $\triangle/B$ |                      |
| 12              | GND                                |                      |

\*configured as differential input

X3 Micro-USB

|  |  |
|--|--|
| OVERTEMPERATURE PROTECTION (ELECTRONICS): 75°C                                     |  |
| AMBIENT TEMPERATURE -10°~ 50°C [14°F ~ 122°F]                                      |  |
| INSULATION RESISTANCE 100 MOhm (UNDER NORMAL TEMPERATURE AND HUMIDITY)             |  |
| INSULATION (MOTOR) CLASS B 130° [266°F]  |  |
| DIELECTRIC STRENGTH 500VAC FOR 1 MIN. (BETWEEN THE MOTOR COILS AND THE MOTOR CASE) |  |
| AMBIENT HUMIDITY MAX. 85% (NO CONDENSATION)  |  |

|     |                         |          |      |
|-----|-------------------------|----------|------|
| 1   | change dimension flange | 06.10.16 | A.S. |
| B   | -                       | 22.03.16 | A.S. |
| A   | -                       | 10.11.15 | A.S. |
| REV | DESCRIPTION             | DATE     | DRN  |

**Nanotec**<sup>®</sup>  
PLUG & DRIVE

|                                       |  |                                  |
|---------------------------------------|--|----------------------------------|
| Surface specification<br>DIN ISO 1302 | General tolerances<br>DIN ISO 2768- cH | Work piece edge<br>DIN ISO 13715 |
|---------------------------------------|--|----------------------------------|

|           |      |          |
|-----------|------|----------|
| APVD      | X.W. | 03.11.15 |
| CHKD      |      |          |
| DRN       | A.S. | 03.11.15 |
| SIGNATURE | DATE |          |

**PLUG&DRIVE MOTOR**

DWG.NO  
PD6-CB87S048030-E-09