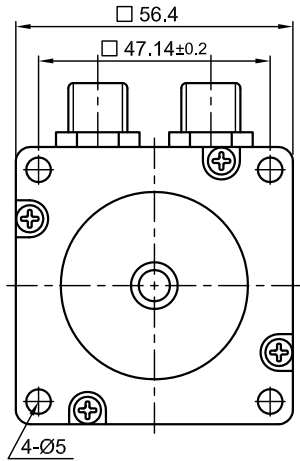
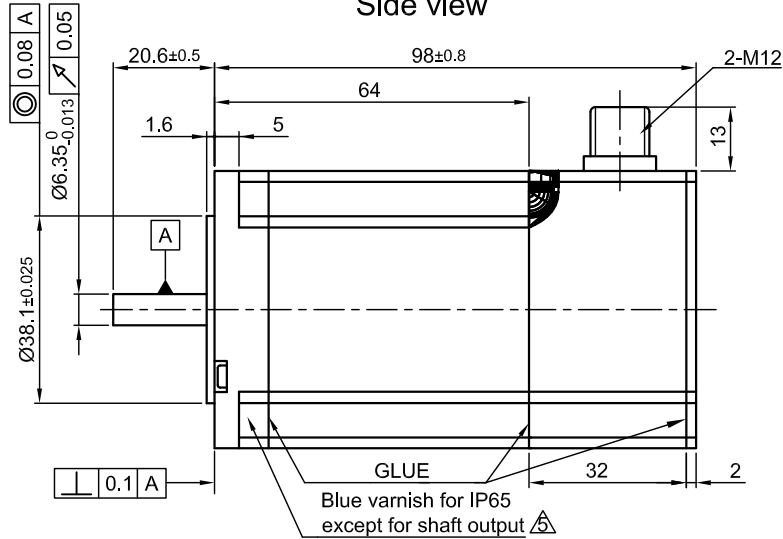


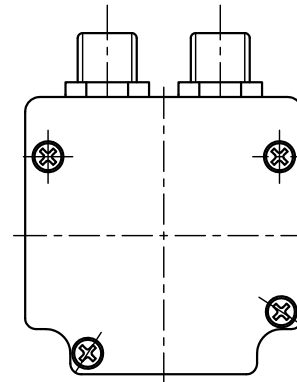
Front view and mounting



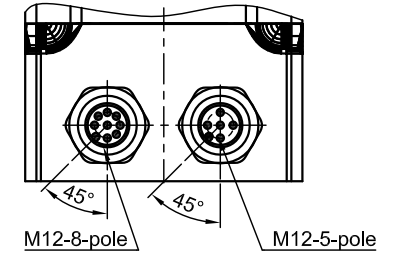
Side view



Rear view



Y view

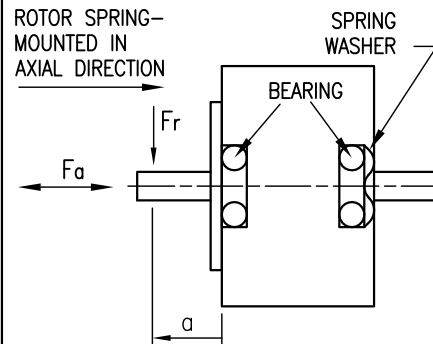


| SPECIFICATION  | CONNECTION | BIPOLAR PARALLEL             |
|--|------------|------------------------------|
| VOLTAGE (VDC)  |            | 2.1                          |
| AMPS/PHASE   |            | 4.2                          |
| RESISTANCE/PHASE (Ohms)@25°C                             |            | 0.5±10%                      |
| INDUCTANCE/PHASE (mH) @1KHz                              |            | 1.9±20%                      |
| HOLDING TORQUE (Nm) [lb-in]                              |            | 1.98 [17.52]                 |
| DETENT TORQUE (Nm) [lb-in]                               |            | 0.068 [0.602]                |
| STEP ANGLE (°) ± ACCURACY                                |            | 1.8±5% (NON-ACCUM)           |
| BACK-EMF (V) (300 U/min)                                 |            | 20                           |
| ROTOR INERTIA (Kg-m <sup>2</sup> ) [lb-in <sup>2</sup> ] |            | 4.8x10 <sup>-5</sup> [0.164] |
| WEIGHT (Kg) [lb]   |            | 1.14 [2.508]                 |

FULL STEP 2 PHASE-Ex., WHEN FACING MOUNTING END (X)

| STEP | A | B | A\ | B\ | CCW |
|------|---|---|----|----|-----|
| 1    | + | + | -  | -  | CW  |
| 2    | - | + | +  | -  |     |
| 3    | - | - | +  | +  |     |
| 4    | + | - | -  | +  |     |

PERMISSIBLE RADIAL+AXIAL FORCE



| M12-5 pole Motor |            |
|------------------|------------|
| PIN. NO.         | ASSIGNMENT |
| 1                | A\         |
| 2                | A          |
| 3                | B          |
| 4                | B\         |
| 5                | HOUSING    |

| M12-8 pole Encoder |               |
|--------------------|---------------|
| PIN. NO.           | ASSIGNMENT    |
| 1                  | A             |
| 2                  | A\            |
| 3                  | B             |
| 4                  | B\            |
| 5                  | GND           |
| 6                  | I             |
| 7                  | I\            |
| 8                  | Vcc (5V)      |
| HOUSING            | GND/SHIELDING |

| TEMPERATURE RISE: MAX.80°C (MOTOR STANDSTILL; FOR 2 PHASE ENERGIZED)               | AXIAL-FORCE Fa (N)  | Fa=15 |       |        |    |
|--|---------------------|-------|-------|--------|----|
| AMBIENT TEMPERATURE -10~ 50°C [14°F ~ 122°F]                                       | DISTANCE a (mm)     | 5     | 10    | 15     | 20 |
| INSULATION RESISTANCE 100 MOhm (UNDER NORMAL TEMPERATURE AND HUMIDITY)             | RADIAL-FORCE Fr (N) | 130   | 90    | 70     | 52 |
| INSULATION CLASS B 130° [266°F]  |                     |       | AXIAL | RADIAL |    |
| DIELECTRIC STRENGTH 500VAC FOR 1 MIN. (BETWEEN THE MOTOR COILS AND THE MOTOR CASE) | SHAFT PLAY (mm)     | 0.08  | 0.02  |        |    |
| AMBIENT HUMIDITY MAX. 85% (NO CONDENSATION)  | AT LOAD MAX: (N)    | 4.5   | 4.5   |        |    |

CABLE MOTOR:  
ZK-M12-5-2m(5m)  
STRAIGHT OR 90° ANGELED

CABLE ENCODER:  
ZK-M12-8-2m(5m)  
STRAIGHT OR 90° ANGELED

|     |                          |          |      |                                    |            |           |       |          |                                    |
|-----|--------------------------|----------|------|------------------------------------|------------|-----------|-------|----------|------------------------------------|
| 3   | WIRE COLOUR DELETE       | 30.09.09 | J.W. | <br><b>Nanotec</b><br>PLUG & DRIVE | SCALE FREE | APVD      | S.Ha. | 12.12.08 | <b>STEPPER MOTOR IN PROTECTION</b> |
| 5   | RESTRICTION SUPPLEMENTED | 17.02.10 | J.W. |                                    | X ±0.5     | CHKD      |       |          |                                    |
| 4   | ENCODER TYPE DELETE      | 08.12.09 | J.W. |                                    | 1PL ±0.2   | DRN       | J.W.  | 12.12.08 | DWG.NO                             |
| REV | DESCRIPTION              | DATE     | APVD | AS5918L4204-E                      | 2PL ±0.1   | SIGNATURE |       | DATE     | AS5918L4204-E                      |
|     |                          |          |      |                                    | ANGLE ±30' |           |       |          |                                    |