

90BLDC-002

TECHLF

3 Grand Rue

11400 Villeneuve La Comptal

France

SIRET : 453 137 283 00017 - APE : 742C

TVA : FR26 453 137 283

Tél : 04 68 23 22 01

E-mail: techlf@techlf.com

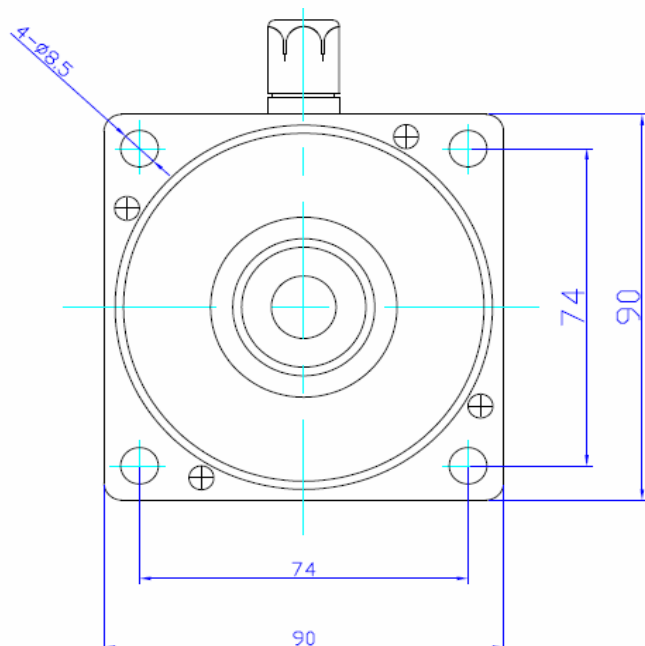
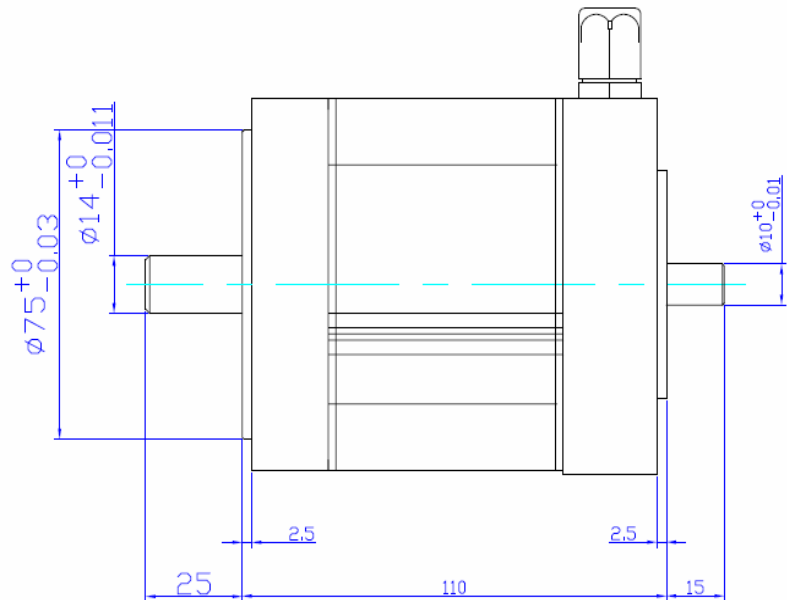
www.techlf.com



New brushless DC motor, high torque, high precision, with optical encoder (1000 ipr)

Typical applications :

- ▶ 3 or 4 axis milling machine
- ▶ lathe
- ▶ linear motion
- ▶ robot
- ▶ etc...



| | | | | | | | |
|-----------------|------------|-------|------|------|------|------|------|
| MODEL | 90BLDC-002 | | | | | | |
| NOMINAL VOLTAGE | 48V | | | | | | |
| RATED CURRENT | ≤12.5A | | | | | | |
| RATED TORQUE | 2N.m | | | | | | |
| RATED SPEED | 2000±0.5% | | | | | | |
| WIRE DIAGRAM | | | | | | | |
| PHASE | PHASE | PHASE | HALL | HALL | HALL | HALL | HALL |
| U | V | W | +5V | A | B | C | GND |
| RED | BLU | YEL | RED | BRO | WHT | GRA | BLK |

TECHLF

90BLDC-002

※ HKT56 SERIES

The HKT56 series are high performance two and three channel optical incremental encoders. These encoders emphasize high reliability, high resolution, and easy assembly. Each encoder contains a lensed LED source (emitter), an integrated circuit with detectors and output circuitry, and a code-wheel which rotates between the emitter and detector integrated circuit. This index is an active high pulse that occurs once every full rotation of the code-wheel. Resolutions up to 2048 counts per Revolution are available in the two and three channel versions.

Features:

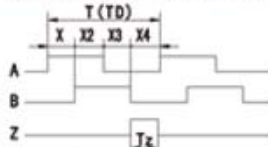
Two or three channel quadrature output with optional index pulse, TTL compatible single Ended outputs on HKT56 series, 100° C operating temperature, Easy assembly, No signal adjustment necessary, Resolutions up to 2048 counts per revolution, Maximum shaft diameter of 20mm.

Applications:

The HKT56 series provide motion detection to a very high resolution and accept a variety of shaft sizes up to a maximum of 20 mm

Output waveform

90° Output phase difference, CW rotation (CW rotation as seen from fit surface)



Square-wave accuracy: $X_n + X_{n+1} = 1/2T \pm 1/12T$
 $X_n + X_{n+1} = 1/2T \pm 1/12T$

Pitch error of period: $\pm 0.01T$

Pitch error of phase position: $\leq 1/18T$

Z phase: $T_z = 1/4T$ (1T, 1/2T, 1/4T...)

Period of pulses: $T = 360^\circ / N$ (N : output pulses)

Signal accuracy: $X_n = 1/4T \pm 1/12T$ (n=1, 2, 3, 4)

A leads B clockwise when viewing the encoder shaft end. The position of Z phase against A, B phase is not specified.

Terminal assignment

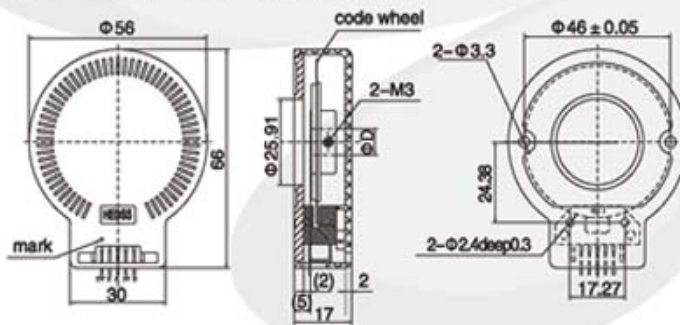
| | | | | | | | | |
|--------------------|-------|--------|-------|-------|-------|-------|--------|--------|
| Cable code | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Cable Color | Black | Red | Green | Brown | Grey | White | Yellow | Orange |
| Line driver output | 0V | Vcc | SIG A | SIG A | SIG B | SIG B | SIG Z | SIG Z |
| Cable code | 1 | 2 | 3 | 4 | 5 | - | - | - |
| Cable Color | Black | Yellow | Green | Red | White | - | - | - |
| Voltage output | 0V | SIG Z | SIG A | Vcc | SIG B | - | - | - |

Ordering code

| | | | | | | | | |
|--------|-----------------------|----------------|-----------------|------------|------------------|----------------|----------------|----------------|
| HKT56 | 08 | WZ | 001 | G | 500 | BZ | 5 | E |
| Series | Hollow Shaft Diameter | Encoder Module | Sequence Number | Connection | Number of Pulses | Output Signals | Supply Voltage | Output Circuit |

Series: HKT56, Hollow shaft diameter: $\Phi 8$ mm, Radial output cable: G, Number of pulses: 500p/r, Output signals: ABZ, Supply voltage: 5V DC, Output circuit: Voltage, Record: HKT5608WZ-001G500BZ-5E

Dimensions



TECHNICAL SPECIFICATIONS

| ELECTRICAL SPECIFICATIONS | |
|------------------------------|---|
| Output wave | Square wave |
| Output signals | A,B phase or A,B,Z phase |
| Current consumption | ≤ 40 mA |
| Output current | 0-5mA |
| Response Frequency | 0-100KHz |
| Output phase difference | $90^\circ \pm 45^\circ$ |
| Supply voltage | 5V DC |
| Signal level | $V_H \geq 85\%V_{CC}$, $V_L \leq 0.3V$ |
| Number of pulses | 1000,1024,2000,2048(Other number of pulse available on request) |
| Output circuit | Line driver, Voltage |
| MECHANICAL SPECIFICATIONS | |
| Rotor inertia of code-wheel | Appr. 6.0×10^{-4} Kgm ² |
| Hollow shaft diameter | $\leq \Phi 20$ mm |
| Shock resistance | 980m/s ² , 6ms, 2 times each on XYZ |
| Vibration proof | 50m/s ² , 10-200Hz, 2 hours each on XYZ |
| Working life | MTBF ≥ 50000 h (+25°C, 2000rpm) |
| Weight | Appr. 25g (with 0.5 meter cable) |
| ENVIRONMENTAL SPECIFICATIONS | |
| Working humidity | 30-85% (No condensation) |
| Storage temperature | -40°C~110°C |
| Working temperature | -25°C~100°C |
| Weld temperature | $\leq 260^\circ$ C |
| Protection class | IP54 |