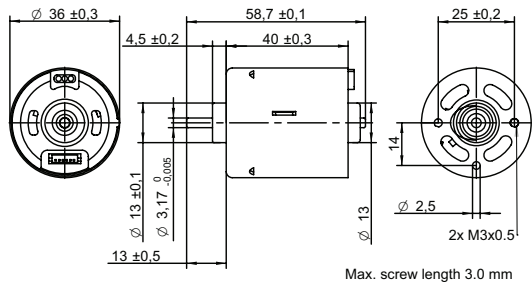


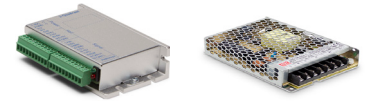
DRAWING (mm)



PHOTO



OPTIONS POWER SUPPLIES



● C = Customizations are offered on demand even for smaller quantities. Typical customizations indicated with green dot at column end. Please contact us for any customization request.

MOTOR TYPE

3-Phase, 120-degree, brushless DC Motor with integrated hall sensors.

| MOTOR DATA                | BT3640-12        | BT3640-24 | C      |
|---------------------------|------------------|-----------|--------|
| Nominal voltage           | V                | 12        | 24     |
| Commutator (hall) voltage | V                | 3.3~5     | 3.3~5  |
| No load speed             | rpm              | 6000      |        |
| No load current           | mA               | 220       | 120    |
| Nominal speed             | rpm              | 4900      | 5100 ● |
| Nominal torque            | mNm              | 21        | 21     |
| Nominal current           | A                | 1.3       | 0.7    |
| Start/Stall torque        | mNm              | 130       | 150    |
| Start/Stall current       | A                | 6.9       | 3.9    |
| Max. efficiency           | %                | 72        | 77     |
| Nominal power             | W                | 11        |        |
| Terminal resistance       | Ω                | 1.1       | 4.2    |
| Terminal inductance       | mH               | 0.7       | 2.7    |
| Torque constant           | mNm/A            | 20        | 39     |
| Speed constant            | rpm/V            | 500       | 250    |
| Speed/ torque gradient    | rpm/mNm          | 240       | 240    |
| Rotor inertia             | gcm <sup>2</sup> | 27~33     | 27~28  |

MECHANICAL DATA

| Mechanical Data                    | BT3640-12    | BT3640-24 | C    |
|------------------------------------|--------------|-----------|------|
| Bearing type                       | Ball bearing |           | ●    |
| Axial play                         | mm           | 0.63      | 0.69 |
| Bearing radial clearance           | μm           | 12        |      |
| Max. axial load (dynamic)          | N            | 4.9       |      |
| Max. force for press fits (static) | N            | 13        |      |

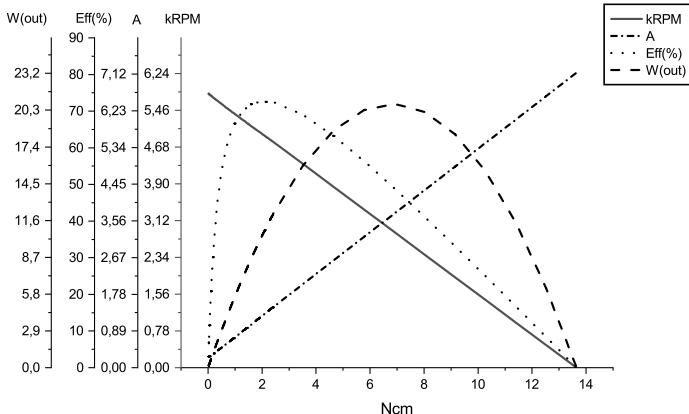
OTHER SPECIFICATIONS

| Other Specifications                  | BT3640-12                | BT3640-24 | C          |
|---------------------------------------|--------------------------|-----------|------------|
| Number of pole pairs                  | 2                        |           |            |
| Number of phases                      | 3                        |           |            |
| Weight                                | g                        | 150       |            |
| Typical noise level                   | dBA                      | 37        | 35         |
| Operating temperature                 | °C                       |           | -40 to +80 |
| Max. winding temperature              | °C                       |           | 150        |
| Motor insulation class                | A                        |           |            |
| IP rating                             | IP40                     |           |            |
| Slot pole pairs                       | 6S4P                     |           |            |
| Rotor magnet                          | BNM-8                    |           |            |
| Hall sensors and power harness length | mm                       | 155 ± 10  | ●          |
| Power harness end connector           | A2502X-03P               |           | ●          |
| Power harness                         | UL3132 20AWG 300V 150°C  |           | ●          |
| Hall sensors harness end connector    | KR1500 MX1.5mm           |           | ●          |
| Hall sensors harness                  | UL10368 26AWG 300V 105°C |           | ●          |
| Shaft length from flange              | mm                       | 13        | ●          |
| Shaft diameter ø                      | mm                       | 3.17      |            |
| Housing material                      | SECD-0 1.0T              |           |            |
| Shaft material                        | S70C                     |           |            |
| Magnet material                       | Bonding NdFeB            |           |            |
| Rotor balancing grade                 | G6.3                     |           |            |
| Service life                          | h                        | 5000      |            |
| Manufacturing standard                | ISO9001   TS16949        |           |            |

CABLE AND PIN CONFIGURATION EXTERNAL DRIVER

| Power |             | Hall  |             | C |
|-------|-------------|-------|-------------|---|
| Phase | Cable color | Phase | Cable color |   |
| U     | White       | HU    | Green       |   |
| V     | Brown       | HV    | Blue        |   |
| W     | Grey        | HW    | Yellow      |   |
|       |             | +5V   | Red         |   |
|       |             | GND   | Black       |   |

MOTOR DATA DIAGRAM 12V



MOTOR DATA DIAGRAM 24V

