

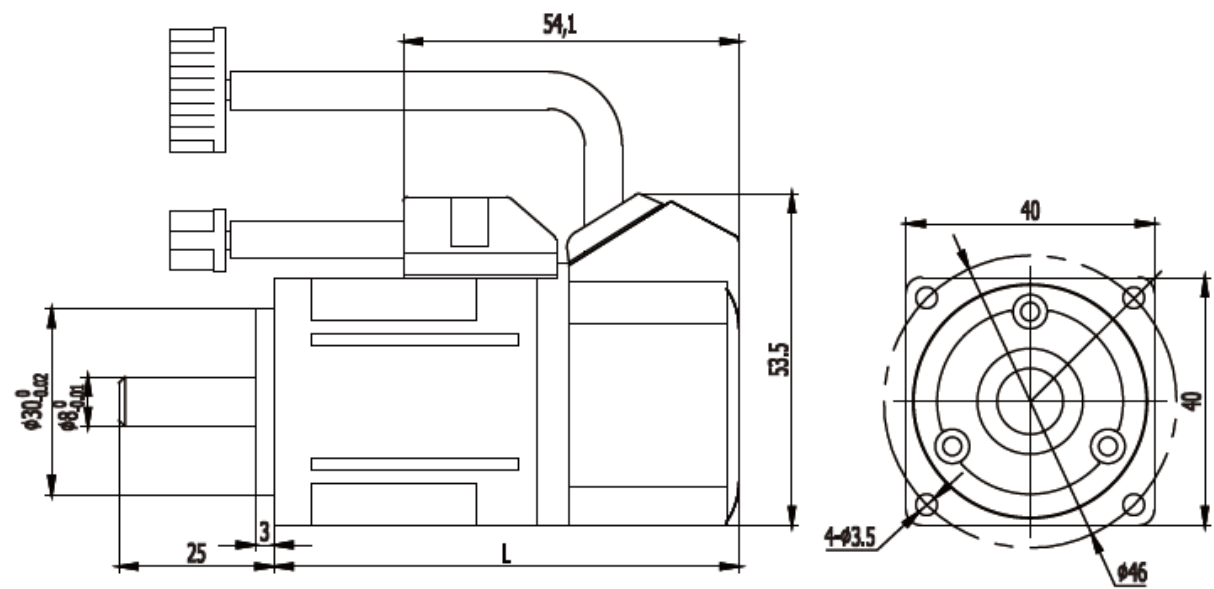
# SERVO MOTORS

## PRODUCT MANUALS



40 SERIES SERVO MOTORS

DIMENSION: UNIT=mm

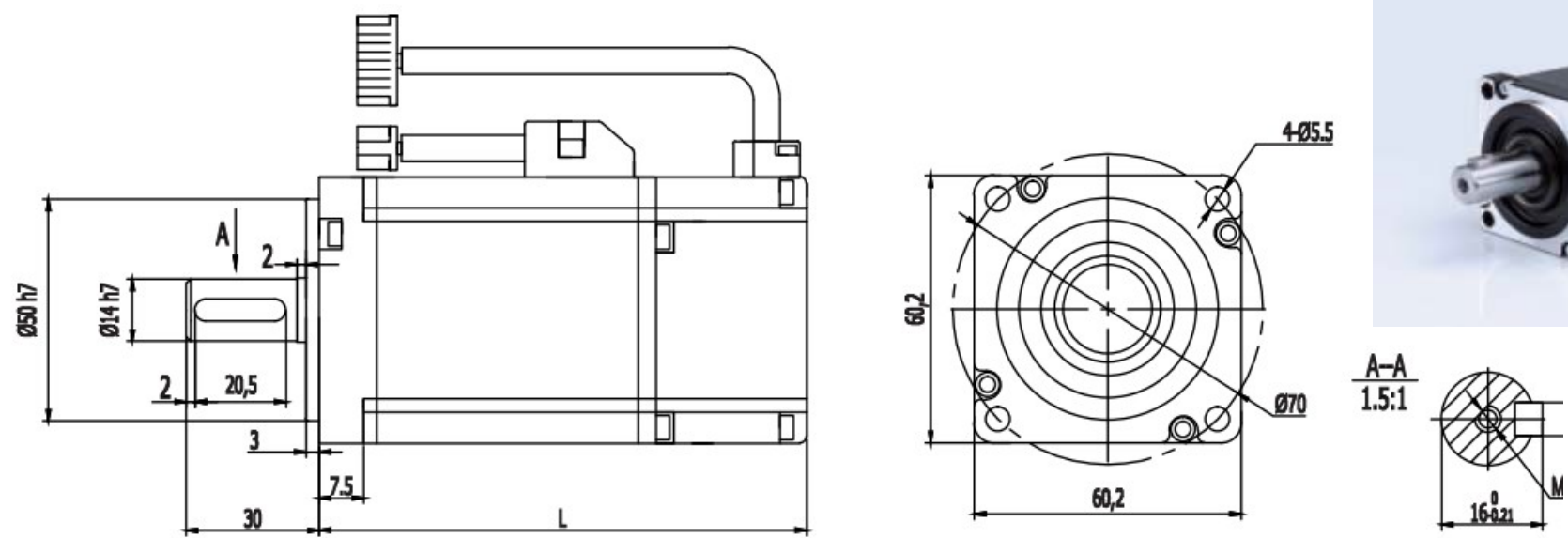


SPECIFICATIONS

| Motor Model                                  | 40ST-M0013048          | 40ST-M00130220         | 40ST-M0033048          | 40ST-M00330220         |
|----------------------------------------------|------------------------|------------------------|------------------------|------------------------|
| Rated Power (W)                              | 50                     | 50                     | 100                    | 100                    |
| Rated Voltage (V)                            | 48                     | 220                    | 48                     | 220                    |
| Rated Current (A)                            | 1.1                    | 0.4                    | 2.5                    | 0.6                    |
| Rated Speed (RPM)                            | 3000                   | 3000                   | 3000                   | 3000                   |
| Rated Torque (N.m)                           | 0.16                   | 0.16                   | 0.32                   | 0.32                   |
| Peak Torque (N.m)                            | 0.48                   | 0.32                   | 0.95                   | 0.64                   |
| Voltage Constant (V/1000r/min)               | 9.2                    | 36.8                   | 8.2                    | 32.8                   |
| Torque Coefficient (N.m/A)                   | 0.145                  | 0.4                    | 0.128                  | 0.53                   |
| Torque Inertia ( Kg.M²)                      | 0.025x10 <sup>-4</sup> | 0.025x10 <sup>-4</sup> | 0.051x10 <sup>-4</sup> | 0.051x10 <sup>-4</sup> |
| Line-Line Resistance (Ω)                     | 6.75                   | 108                    | 2.2                    | 34                     |
| Line-Line Inductance (mH)                    | 7.5                    | 108                    | 3                      | 40                     |
| Electrical Time-Constant (ms)                | 1.11                   | 1                      | 1.36                   | 1.18                   |
| Weight (Kg)                                  | 0.32                   | 0.32                   | 0.47                   | 0.47                   |
| Encode Line Number (PPR)                     | 2500                   |                        |                        |                        |
| Insulation Class                             | Class B                |                        |                        |                        |
| Safety Class                                 | IP65                   |                        |                        |                        |
| Temperature                                  | -20℃ ~ +40℃            |                        |                        |                        |
| Humidity                                     | <90%RH, (no dewing)    |                        |                        |                        |
| Motor Length Without Brake (L)               | 75                     |                        | 90                     |                        |
| Motor Length With Permanent Magnet Brake (L) | 109                    |                        | 124                    |                        |

60 SERIES SERVO MOTORS

DIMENSION: UNIT=mm

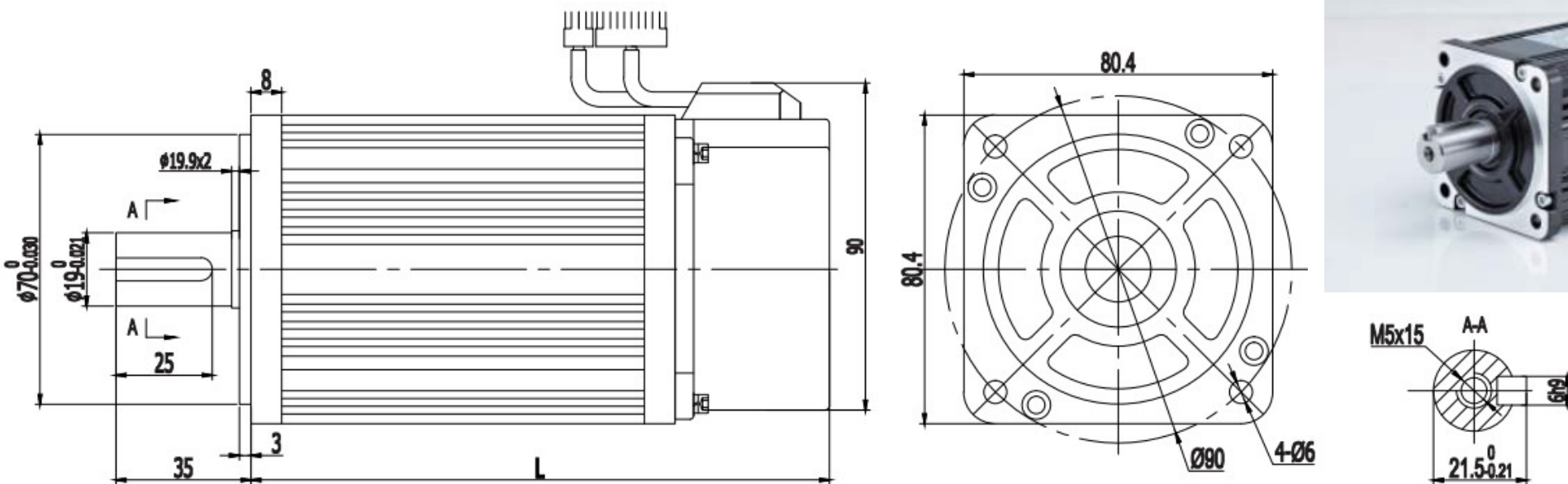


SPECIFICATIONS

| Motor Model                                  | 60CST-M00630           | 60CST-M01330          | 60CST-M01930          |
|----------------------------------------------|------------------------|-----------------------|-----------------------|
| Rated Power (W)                              | 200                    | 400                   | 600                   |
| Rated Voltage (V)                            | 220                    | 220                   | 220                   |
| Rated Current (A)                            | 1.2                    | 2.8                   | 3.5                   |
| Rated Speed (RPM)                            | 3000                   | 3000                  | 3000                  |
| Rated Torque (N.m)                           | 0.637                  | 1.27                  | 1.91                  |
| Peak Torque (N.m)                            | 1.91                   | 3.9                   | 5.73                  |
| Voltage Constant (V/1000r/min)               | 30.9                   | 29.6                  | 34                    |
| Torque Coefficient (N.m/A)                   | 0.53                   | 0.45                  | 0.55                  |
| Torque Inertia ( Kg.M²)                      | 0.175x10 <sup>-4</sup> | 0.29x10 <sup>-4</sup> | 0.39x10 <sup>-4</sup> |
| Line-Line Resistance (Ω)                     | 6.18                   | 2.35                  | 1.93                  |
| Line-Line Inductance (mH)                    | 29.3                   | 14.5                  | 10.7                  |
| Electrical Time-Constant (ms)                | 4.74                   | 6.17                  | 5.5                   |
| Weight (Kg)                                  | 1.16                   | 1.6                   | 2.07                  |
| Encode Line Number (PPR)                     | 2500                   |                       |                       |
| Insulation Class                             | Class F                |                       |                       |
| Safety Class                                 | IP65                   |                       |                       |
| Temperature                                  | -20℃ ~ +40℃            |                       |                       |
| Humidity                                     | <90%RH, (no dewing)    |                       |                       |
| Motor Length Without Brake (L)               | 116                    | 141                   | 169                   |
| Motor Length With Permanent Magnet Brake (L) | 164                    | 189                   | 217                   |

## 80 SERIES SERVO MOTORS

DIMENSION: UNIT=mm

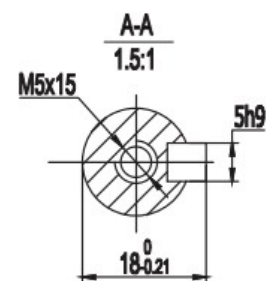
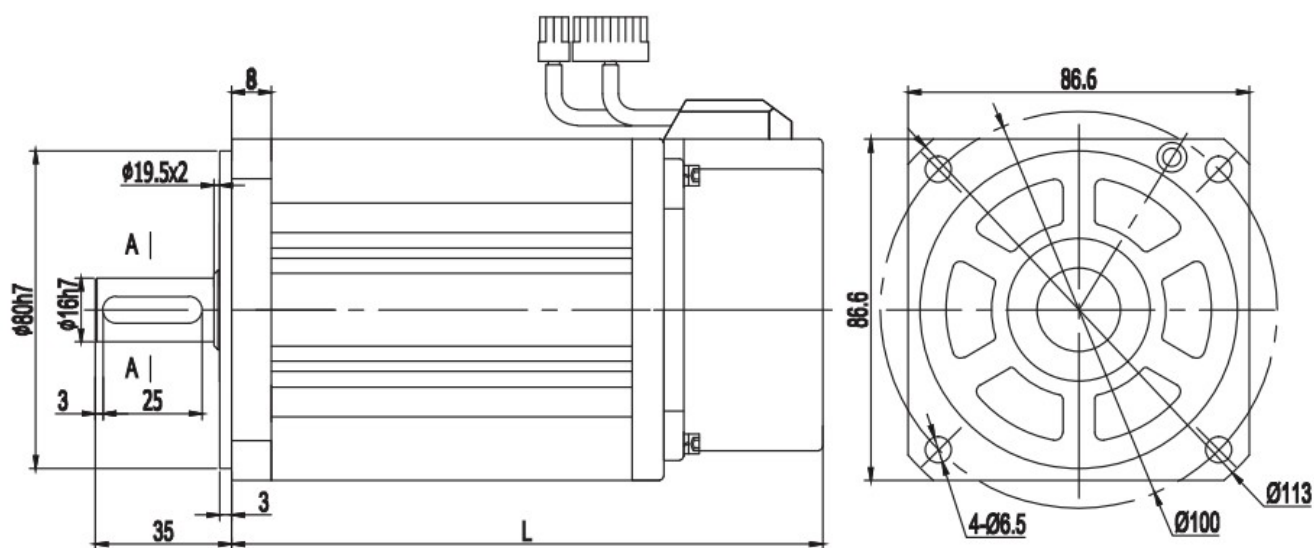


## SPECIFICATIONS

| Motor Model                                  | 80ST-M01330           | 80ST-M02430           | 80ST-M00330           | 80ST-M04025           |
|----------------------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Rated Power (kW)                             | 0.4                   | 0.75                  | 0.73                  | 1.0                   |
| Rated Voltage (V)                            | 220                   | 220                   | 220                   | 220                   |
| Rated Current (A)                            | 2                     | 3                     | 3                     | 4.4                   |
| Rated Speed (RPM)                            | 3000                  | 3000                  | 2000                  | 2500                  |
| Rated Torque (N.m)                           | 1.27                  | 2.39                  | 3.5                   | 4                     |
| Peak Torque (N.m)                            | 3.8                   | 7.1                   | 10.5                  | 12                    |
| Peak Current (A)                             | 6                     | 9                     | 9                     | 13.2                  |
| Voltage Constant (V/1000r/min)               | 40                    | 48                    | 71                    | 56                    |
| Torque Coefficient (N.m/A)                   | 0.64                  | 0.8                   | 1.17                  | 0.9                   |
| Torque Inertia ( Kg.M <sup>2</sup> )         | 1.05x10 <sup>-4</sup> | 1.82x10 <sup>-4</sup> | 2.63x10 <sup>-4</sup> | 2.97x10 <sup>-4</sup> |
| Line-Line Resistance (Ω)                     | 4.44                  | 2.88                  | 3.65                  | 1.83                  |
| Line-Line Inductance (mH)                    | 7.93                  | 6.4                   | 8.8                   | 4.72                  |
| Electrical Time-Constant (ms)                | 1.66                  | 2.22                  | 2.4                   | 2.58                  |
| Weight (Kg)                                  | 1.78                  | 2.9                   | 3.9                   | 4.1                   |
| Encode Line Number (PPR)                     | 2500                  |                       |                       |                       |
| Insulation Class                             | Class F               |                       |                       |                       |
| Safety Class                                 | IP65                  |                       |                       |                       |
| Temperature                                  | -20℃ ~ +40℃           |                       |                       |                       |
| Humidity                                     | <90%RH, (no dewing)   |                       |                       |                       |
| Motor Length Without Brake (L)               | 124                   | 151                   | 179                   | 191                   |
| Motor Length With Permanent Magnet Brake (L) | 178                   | 205                   | 233                   | 245                   |

## 90 SERIES SERVO MOTORS

DIMENSION: UNIT=mm

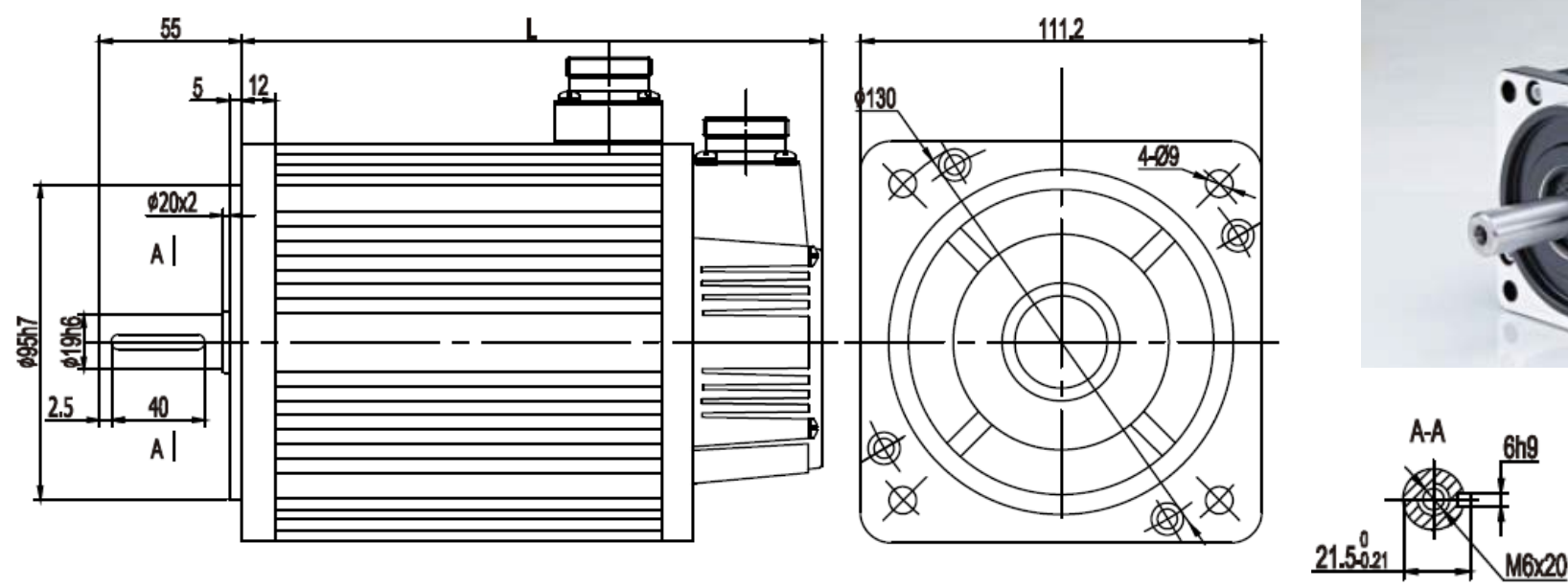


## SPECIFICATIONS

| Motor Model                                  | 90ST-M02430           | 90ST-M03520          | 90ST-M04025          |
|----------------------------------------------|-----------------------|----------------------|----------------------|
| Rated Power (kW)                             | 0.75                  | 0.73                 | 1.0                  |
| Rated Voltage (V)                            | 220                   | 220                  | 220                  |
| Rated Current (A)                            | 3                     | 3                    | 4                    |
| Rated Speed (RPM)                            | 3000                  | 2000                 | 2500                 |
| Rated Torque (N.m)                           | 2.4                   | 3.5                  | 4                    |
| Peak Torque (N.m)                            | 7.1                   | 10.5                 | 12                   |
| Peak Current (A)                             | 9                     | 9                    | 12                   |
| Voltage Constant (V/1000r/min)               | 51                    | 67                   | 60                   |
| Torque Coefficient (N.m/A)                   | 0.8                   | 1.2                  | 1.0                  |
| Torque Inertia ( Kg.M <sup>2</sup> )         | 2.45x10 <sup>-4</sup> | 3.4x10 <sup>-4</sup> | 3.7x10 <sup>-4</sup> |
| Line-Line Resistance ( $\Omega$ )            | 3.2                   | 4.06                 | 2.69                 |
| Line-Line Inductance (mH)                    | 7.0                   | 9.7                  | 6.21                 |
| Electrical Time-Constant (ms)                | 2.2                   | 2.39                 | 2.3                  |
| Weight (Kg)                                  | 3.1                   | 3.9                  | 4.2                  |
| Encode Line Number (PPR)                     | 2500                  |                      |                      |
| Insulation Class                             | Class F               |                      |                      |
| Safety Class                                 | IP65                  |                      |                      |
| Temperature                                  | -20℃ ~ +40℃           |                      |                      |
| Humidity                                     | <90%RH, (no dewing)   |                      |                      |
| Motor Length Without Brake (L)               | 150                   | 172                  | 182                  |
| Motor Length With Permanent Magnet Brake (L) | 207                   | 229                  | 239                  |

110 SERIES SERVO MOTORS

DIMENSION: UNIT=mm

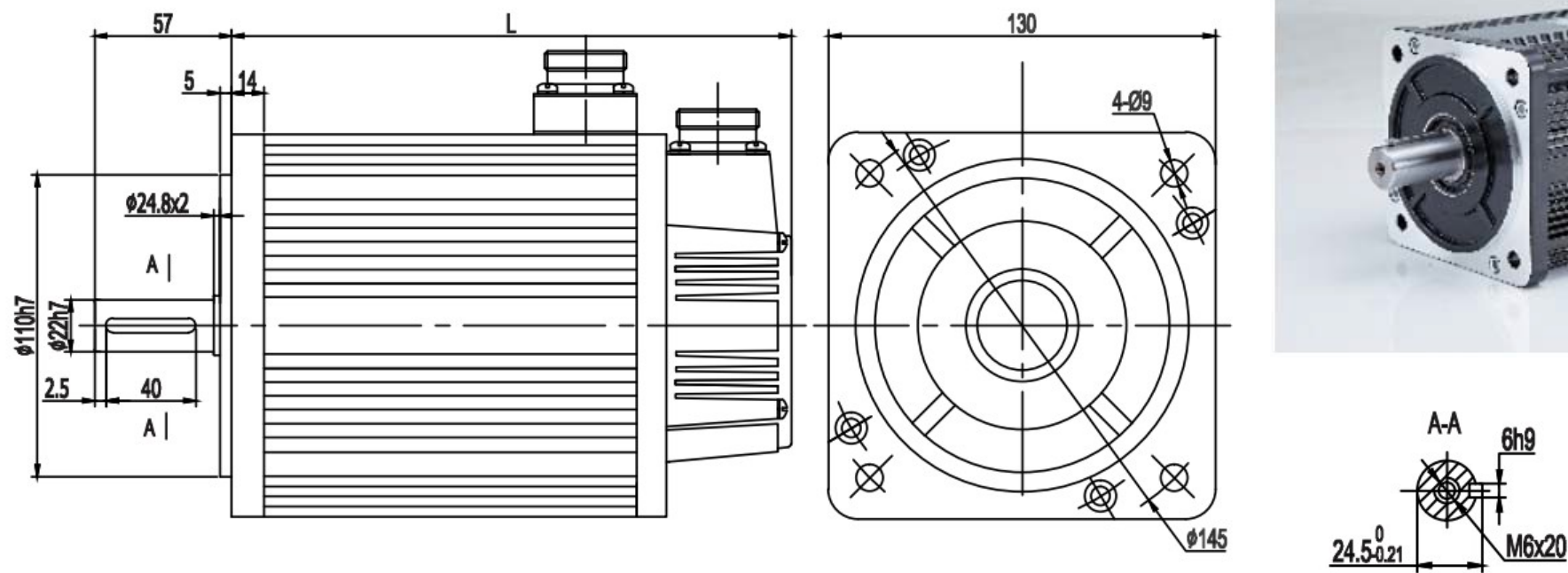


SPECIFICATIONS

| Motor Model                                  | 110ST-M04020          | 110ST-M04030          | 110ST-M05030          | 110ST-M06030          |
|----------------------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Rated Power (kW)                             | 0.8                   | 1.2                   | 1.5                   | 1.8                   |
| Rated Voltage (V)                            | 220                   | 220                   | 220                   | 220                   |
| Rated Current (A)                            | 3.5                   | 5.0                   | 6.0                   | 6.0                   |
| Rated Speed (RPM)                            | 2000                  | 3000                  | 3000                  | 3000                  |
| Rated Torque (N.m)                           | 4                     | 4                     | 5                     | 6                     |
| Peak Torque (N.m)                            | 12                    | 12                    | 15                    | 18                    |
| Voltage Constant (V/1000r/min)               | 79                    | 54                    | 62                    | 60                    |
| Torque Coefficient (N.m/A)                   | 1.14                  | 0.8                   | 0.83                  | 1.0                   |
| Torque Inertia ( Kg.M <sup>2</sup> )         | 0.54x10 <sup>-3</sup> | 0.54x10 <sup>-3</sup> | 0.63x10 <sup>-3</sup> | 0.76x10 <sup>-3</sup> |
| Line-Line Resistance (Ω)                     | 2.41                  | 1.09                  | 1.03                  | 0.81                  |
| Line-Line Inductance (mH)                    | 7.3                   | 3.3                   | 3.43                  | 2.59                  |
| Electrical Time-Constant (ms)                | 3                     | 3                     | 3.33                  | 3.2                   |
| Weight (Kg)                                  | 6                     | 6                     | 6.8                   | 7.9                   |
| Encode Line Number (PPR)                     | 2500                  |                       |                       |                       |
| Insulation Class                             | Class F               |                       |                       |                       |
| Safety Class                                 | IP65                  |                       |                       |                       |
| Temperature                                  | -20℃ ~ +40℃           |                       |                       |                       |
| Humidity                                     | <90%RH, (no dewing)   |                       |                       |                       |
| Motor Length Without Brake (L)               | 189                   | 189                   | 204                   | 219                   |
| Motor Length With Permanent Magnet Brake (L) | 245                   | 245                   | 260                   | 275                   |

130 SERIES SERVO MOTORS

DIMENSION: UNIT=mm

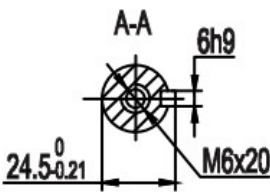
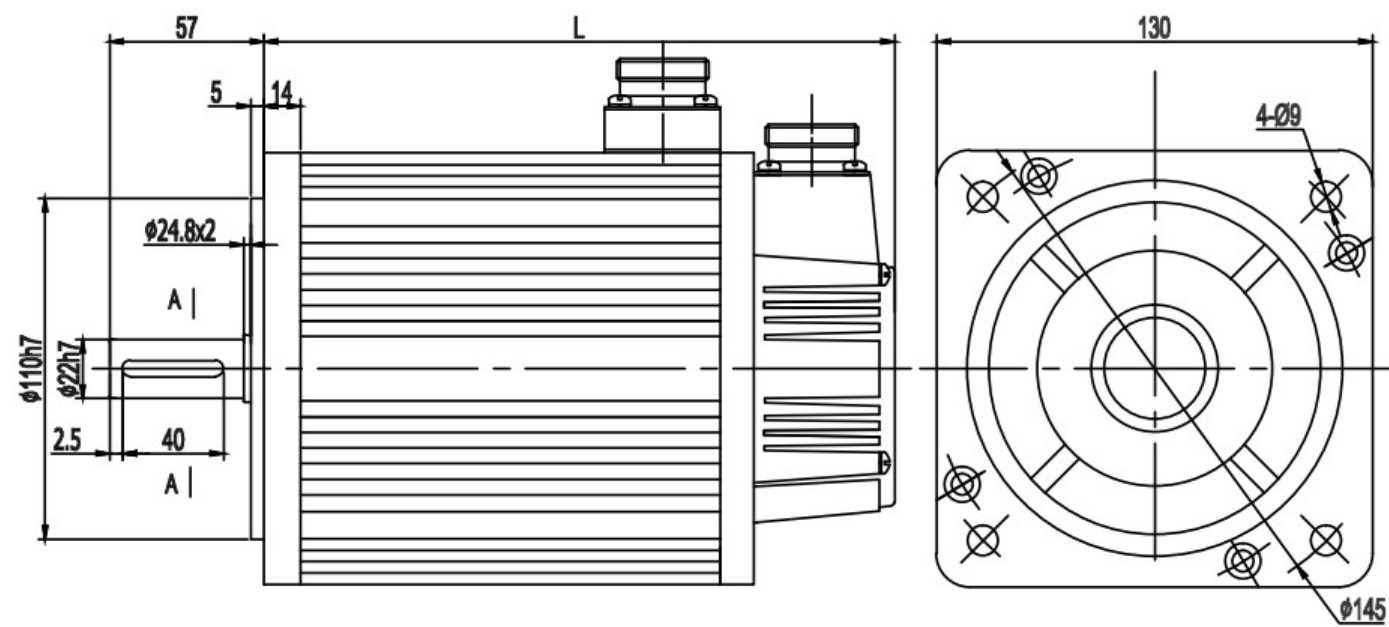


SPECIFICATIONS

| Motor Model                                  | 130ST-M04025          | 130ST-M05025          | 130ST-M06025          | 130ST-M07725          |
|----------------------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Rated Power (kW)                             | 1.0                   | 1.3                   | 1.5                   | 2.0                   |
| Rated Voltage (V)                            | 220                   | 220                   | 220                   | 220                   |
| Rated Current (A)                            | 4.0                   | 5.0                   | 6.0                   | 7.5                   |
| Rated Speed (RPM)                            | 2500                  | 2500                  | 2500                  | 2500                  |
| Rated Torque (N.m)                           | 4                     | 5                     | 6                     | 7.7                   |
| Peak Torque (N.m)                            | 12                    | 15                    | 18                    | 22                    |
| Voltage Constant (V/1000r/min)               | 72                    | 68                    | 65                    | 68                    |
| Torque Coefficient (N.m/A)                   | 1.0                   | 1.0                   | 1.0                   | 1.03                  |
| Torque Inertia ( Kg.M <sup>2</sup> )         | 0.85x10 <sup>-3</sup> | 1.06x10 <sup>-3</sup> | 1.26x10 <sup>-3</sup> | 1.53x10 <sup>-3</sup> |
| Line-Line Resistance (Ω)                     | 2.76                  | 1.84                  | 1.21                  | 1.01                  |
| Line-Line Inductance (mH)                    | 6.42                  | 4.9                   | 3.87                  | 2.94                  |
| Electrical Time-Constant (ms)                | 2.32                  | 2.66                  | 3.26                  | 2.91                  |
| Weight (Kg)                                  | 6.2                   | 6.6                   | 7.4                   | 8.3                   |
| Encode Line Number (PPR)                     | 2500                  |                       |                       |                       |
| Insulation Class                             | Class F               |                       |                       |                       |
| Safety Class                                 | IP65                  |                       |                       |                       |
| Temperature                                  | -20℃ ~ +40℃           |                       |                       |                       |
| Humidity                                     | <90%RH, (no dewing)   |                       |                       |                       |
| Motor Length Without Brake (L)               | 166                   | 171                   | 179                   | 192                   |
| Motor Length With Permanent Magnet Brake (L) | 236                   | 241                   | 249                   | 262                   |

130 SERIES SERVO MOTORS

DIMENSION: UNIT=mm

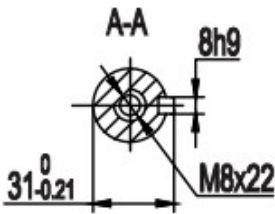
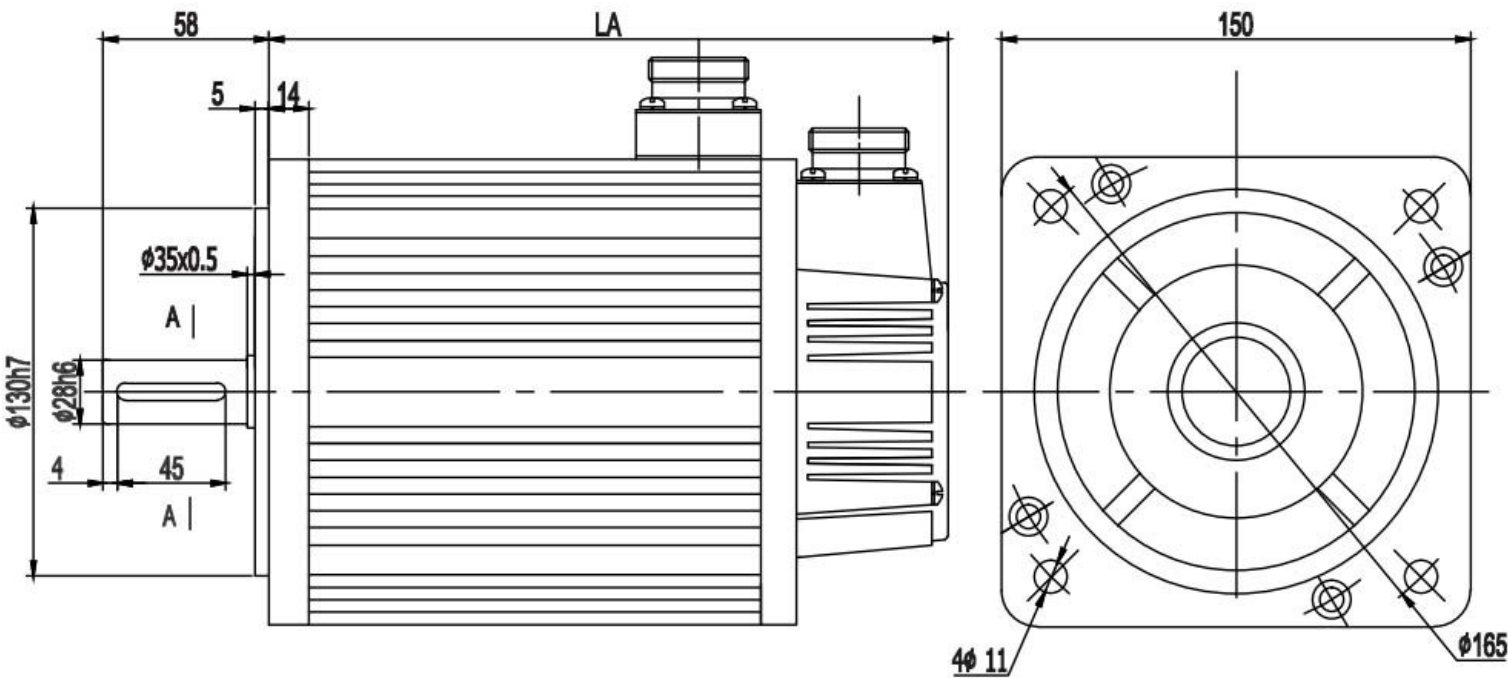


SPECIFICATIONS

| Motor Model                                  | 130ST-M10015          | 130ST-M10025          | 130ST-M15015          | 130ST-M15025          |
|----------------------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Rated Power (kW)                             | 1.5                   | 2.6                   | 2.3                   | 3.8                   |
| Rated Voltage (V)                            | 220                   | 220                   | 220                   | 220                   |
| Rated Current (A)                            | 6.0                   | 10.0                  | 9.5                   | 13.5                  |
| Rated Speed (RPM)                            | 1500                  | 2500                  | 1500                  | 2500                  |
| Rated Torque (N.m)                           | 10                    | 10                    | 15                    | 15                    |
| Peak Torque (N.m)                            | 25                    | 25                    | 30                    | 30                    |
| Voltage Constant (V/1000r/min)               | 103                   | 70                    | 114                   | 67                    |
| Torque Coefficient (N.m/A)                   | 1.67                  | 1.0                   | 1.58                  | 1.11                  |
| Torque Inertia ( Kg.M <sup>2</sup> )         | 1.94x10 <sup>-3</sup> | 1.94x10 <sup>-3</sup> | 2.77x10 <sup>-3</sup> | 2.77x10 <sup>-3</sup> |
| Line-Line Resistance ( $\Omega$ )            | 1.5                   | 0.73                  | 1.1                   | 0.49                  |
| Line-Line Inductance (mH)                    | 4.37                  | 2.45                  | 4.45                  | 2.94                  |
| Electrical Time-Constant (ms)                | 2.91                  | 3.36                  | 4.05                  | 3.43                  |
| Weight (Kg)                                  | 10.2                  | 9.8                   | 12.6                  | 11.7                  |
| Encode Line Number (PPR)                     | 2500                  |                       |                       |                       |
| Insulation Class                             | Class F               |                       |                       |                       |
| Safety Class                                 | IP65                  |                       |                       |                       |
| Temperature                                  | -20℃ ~ +40℃           |                       |                       |                       |
| Humidity                                     | <90%RH, (no dewing)   |                       |                       |                       |
| Motor Length Without Brake (L)               | 213                   | 209                   | 241                   | 231                   |
| Motor Length With Permanent Magnet Brake (L) | 283                   | 279                   | 311                   | 301                   |

150 SERIES SERVO MOTORS

DIMENSION: UNIT=mm

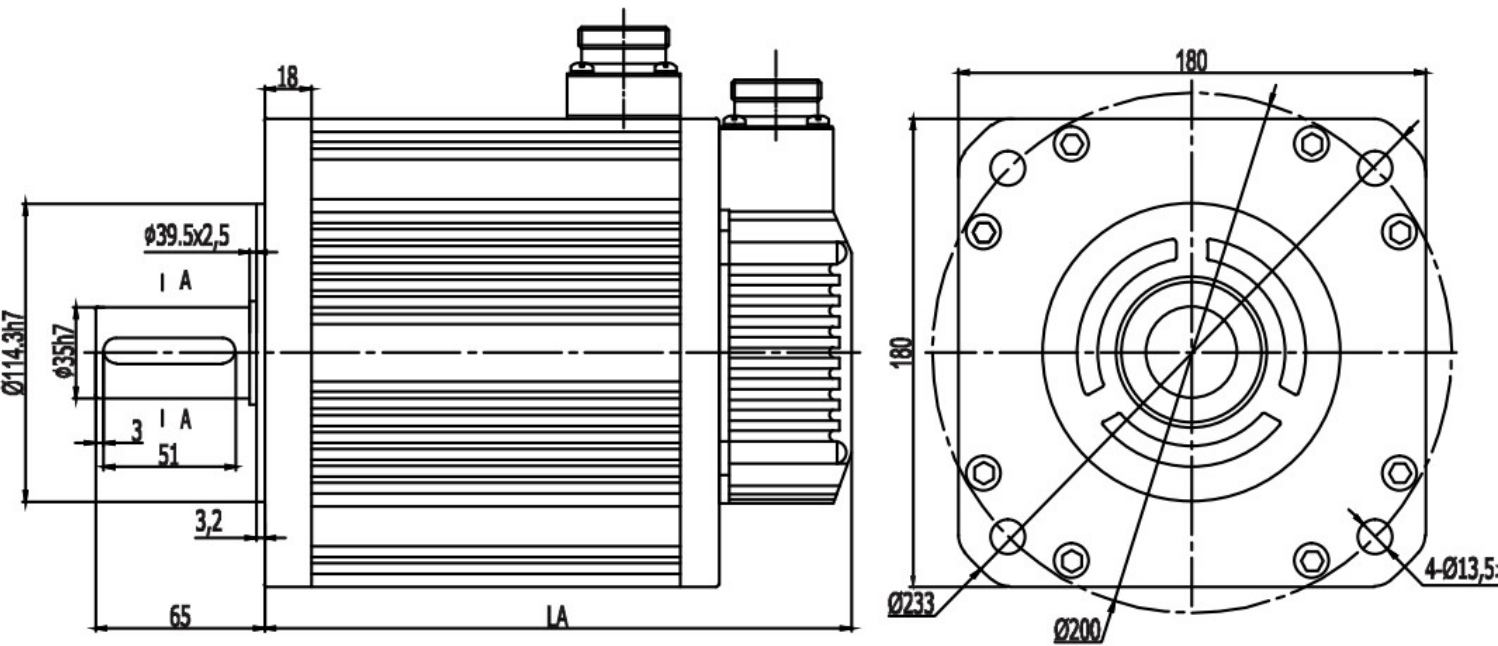


SPECIFICATIONS

| Motor Model                                  | 150ST-M15020          | 150ST-M18020         | 150ST-M23020         | 150ST-M27020         |
|----------------------------------------------|-----------------------|----------------------|----------------------|----------------------|
| Rated Power (kW)                             | 3.0                   | 3.6                  | 4.7                  | 5.5                  |
| Rated Voltage (V)                            | 220                   | 220                  | 220                  | 220                  |
| Rated Current (A)                            | 14                    | 17                   | 21                   | 27                   |
| Rated Speed (RPM)                            | 2000                  | 2000                 | 2000                 | 2000                 |
| Rated Torque (N.m)                           | 15                    | 18                   | 23                   | 27                   |
| Peak Torque (N.m)                            | 30                    | 36                   | 46                   | 54                   |
| Voltage Constant (V/1000r/min)               | 70                    | 71                   | 72                   | 64                   |
| Torque Coefficient (N.m/A)                   | 1.07                  | 1.05                 | 1.09                 | 1.0                  |
| Torque Inertia ( Kg.M <sup>2</sup> )         | 3.88x10 <sup>-3</sup> | 4.6x10 <sup>-3</sup> | 5.8x10 <sup>-3</sup> | 6.8x10 <sup>-3</sup> |
| Line-Line Resistance ( $\Omega$ )            | 0.34                  | 0.255                | 0.2                  | 0.125                |
| Line-Line Inductance (mH)                    | 1.55                  | 1.3                  | 1.06                 | 0.7                  |
| Electrical Time-Constant (ms)                | 4.56                  | 5.1                  | 5.3                  | 5.6                  |
| Weight (Kg)                                  | 15                    | 17                   | 20.4                 | 22.7                 |
| Encode Line Number (PPR)                     | 2500                  |                      |                      |                      |
| Insulation Class                             | Class F               |                      |                      |                      |
| Safety Class                                 | IP65                  |                      |                      |                      |
| Temperature                                  | -20℃ ~ +40℃           |                      |                      |                      |
| Humidity                                     | <90%RH, (no dewing)   |                      |                      |                      |
| Motor Length Without Brake (L)               | 230                   | 248                  | 278                  | 302                  |
| Motor Length With Permanent Magnet Brake (L) | 303                   | 321                  | 351                  | 375                  |

# 180 SERIES SERVO MOTORS

DIMENSION: UNIT=mm

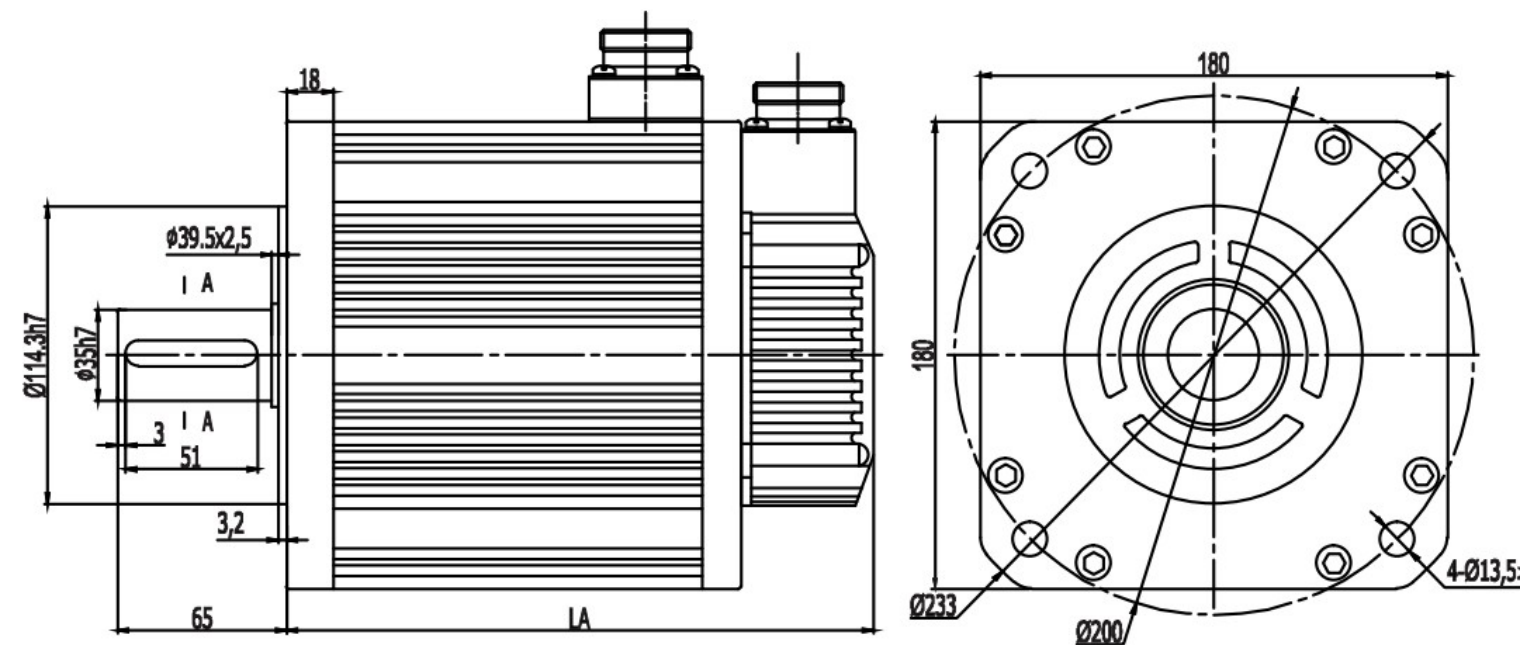


## SPECIFICATIONS

| Motor Model                                  | 180ST-M17215         |      | 180ST-M19015         |      | 180ST-M21520          |      | 180ST-M27010          |      |
|----------------------------------------------|----------------------|------|----------------------|------|-----------------------|------|-----------------------|------|
| Rated Power (kW)                             | 2.7                  |      | 3.0                  |      | 4.5                   |      | 2.9                   |      |
| Rated Voltage (V)                            | 220                  | 380  | 220                  | 380  | 220                   | 380  | 220                   | 380  |
| Rated Current (A)                            | 10.5                 | 6.5  | 12                   | 7.5  | 16                    | 9.5  | 12                    | 7.5  |
| Rated Speed (RPM)                            | 1500                 |      | 1500                 |      | 2000                  |      | 1000                  |      |
| Rated Torque (N.m)                           | 17.2                 |      | 19                   |      | 21.5                  |      | 27                    |      |
| Peak Torque (N.m)                            | 43                   |      | 47                   |      | 53                    |      | 67                    |      |
| Voltage Constant (V/1000r/min)               | 112                  | 167  | 97                   | 170  | 84                    | 140  | 138                   | 224  |
| Torque Coefficient (N.m/A)                   | 1.64                 | 2.65 | 1.58                 | 2.5  | 1.34                  | 2.26 | 2.25                  | 3.6  |
| Torque Inertia ( Kg.M²)                      | 6.5x10 <sup>-3</sup> |      | 7.0x10 <sup>-3</sup> |      | 7.96x10 <sup>-3</sup> |      | 9.64x10 <sup>-3</sup> |      |
| Line-Line Resistance (Ω)                     | 0.7                  | 1.47 | 0.4                  | 1.23 | 0.24                  | 0.71 | 0.48                  | 1.37 |
| Line-Line Inductance (mH)                    | 3.5                  | 7.8  | 2.42                 | 1.3  | 1.45                  | 4    | 3.26                  | 8.6  |
| Electrical Time-Constant (ms)                | 5                    | 5.3  | 6                    | 5.93 | 6                     | 5.6  | 6.79                  | 6.27 |
| Weight (Kg)                                  | 19.5                 |      | 20.5                 |      | 22.2                  |      | 25.5                  |      |
| Encode Line Number (PPR)                     | 2500                 |      |                      |      |                       |      |                       |      |
| Insulation Class                             | Class F              |      |                      |      |                       |      |                       |      |
| Safety Class                                 | IP65                 |      |                      |      |                       |      |                       |      |
| Temperature                                  | -20℃ ~ +40℃          |      |                      |      |                       |      |                       |      |
| Humidity                                     | <90%RH, (no dewing)  |      |                      |      |                       |      |                       |      |
| Motor Length Without Brake (L)               | 226                  |      | 232                  |      | 243                   |      | 262                   |      |
| Motor Length With Permanent Magnet Brake (L) | 308                  |      | 314                  |      | 325                   |      | 344                   |      |

# 180 SERIES SERVO MOTORS

DIMENSION: UNIT=mm



## SPECIFICATIONS

| Motor Model                                  | 180ST-M27015          |       | 180ST-M35010           |      | 180ST-M35015           |      | 180ST-M48015           |       |
|----------------------------------------------|-----------------------|-------|------------------------|------|------------------------|------|------------------------|-------|
| Rated Power (kW)                             | 4.3                   |       | 3.7                    |      | 5.5                    |      | 7.5                    |       |
| Rated Voltage (V)                            | 220                   | 380   | 220                    | 380  | 220                    | 380  | 220                    | 380   |
| Rated Current (A)                            | 16                    | 10    | 16                     | 10   | 24                     | 12   | 30                     | 20    |
| Rated Speed (RPM)                            | 1500                  |       | 1000                   |      | 1500                   |      | 1500                   |       |
| Rated Torque (N.m)                           | 27                    |       | 35                     |      | 35                     |      | 48                     |       |
| Peak Torque (N.m)                            | 67                    |       | 70                     |      | 70                     |      | 96                     |       |
| Voltage Constant (V/1000r/min)               | 103                   | 172   | 134                    | 223  | 90                     | 181  | 94                     | 156   |
| Torque Coefficient (N.m/A)                   | 1.69                  | 2.7   | 2.2                    | 3.5  | 1.45                   | 2.9  | 1.5                    | 2.4   |
| Torque Inertia ( Kg.M²)                      | 9.64x10 <sup>-3</sup> |       | 12.25x10 <sup>-3</sup> |      | 12.25x10 <sup>-3</sup> |      | 16.72x10 <sup>-3</sup> |       |
| Line-Line Resistance (Ω)                     | 0.28                  | 0.796 | 0.31                   | 0.93 | 0.14                   | 0.62 | 0.104                  | 0.273 |
| Line-Line Inductance (mH)                    | 1.74                  | 4.83  | 3.28                   | 9.1  | 1.0                    | 4    | 0.77                   | 2.14  |
| Electrical Time-Constant (ms)                | 6.2                   | 6     | 10.58                  | 9.78 | 7.14                   | 6.45 | 7.4                    | 7.8   |
| Weight (Kg)                                  | 25.5                  |       | 30.5                   |      | 30.5                   |      | 40                     |       |
| Encode Line Number (PPR)                     | 2500                  |       |                        |      |                        |      |                        |       |
| Insulation Class                             | Class F               |       |                        |      |                        |      |                        |       |
| Safety Class                                 | IP65                  |       |                        |      |                        |      |                        |       |
| Temperature                                  | -20℃ ~ +40℃           |       |                        |      |                        |      |                        |       |
| Humidity                                     | <90%RH, (no dewing)   |       |                        |      |                        |      |                        |       |
| Motor Length Without Brake (L)               | 262                   |       | 292                    |      | 292                    |      | 346                    |       |
| Motor Length With Permanent Magnet Brake (L) | 344                   |       | 382                    |      | 382                    |      | 436                    |       |