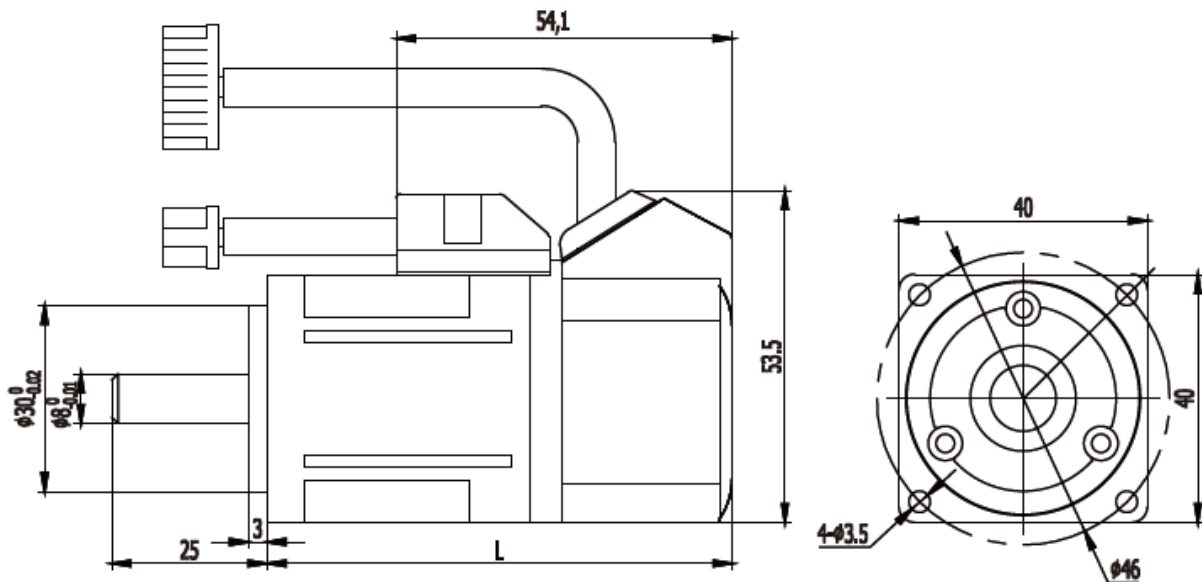


SERVO MOTORS
PRODUCT MANUALS



DIMENSION: UNIT=mm

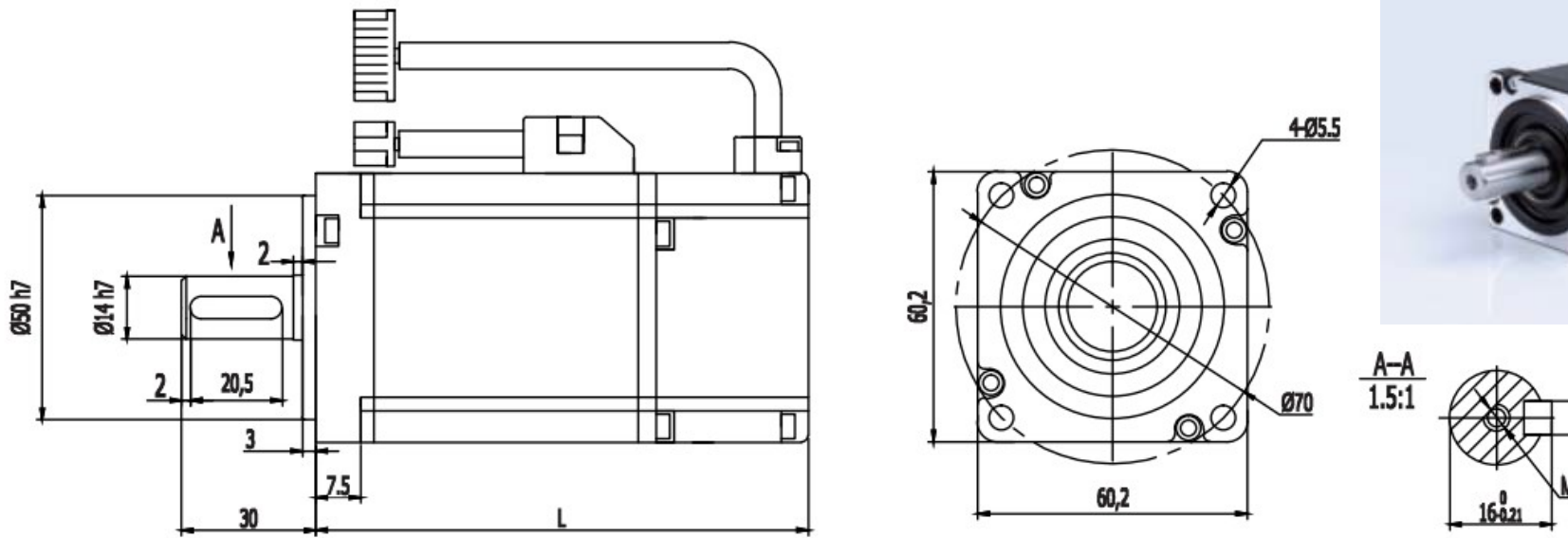


SPECIFICATIONS

| Motor Model | ATO40ST-M0013048 | ATO40ST-M00130220 | ATO40ST-M0033048 | ATO40ST-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.M ²) | 0.025x10 ⁻⁴ | 0.025x10 ⁻⁴ | 0.051x10 ⁻⁴ | 0.051x10 ⁻⁴ |
| 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°C ~ +40°C | | | |
| 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

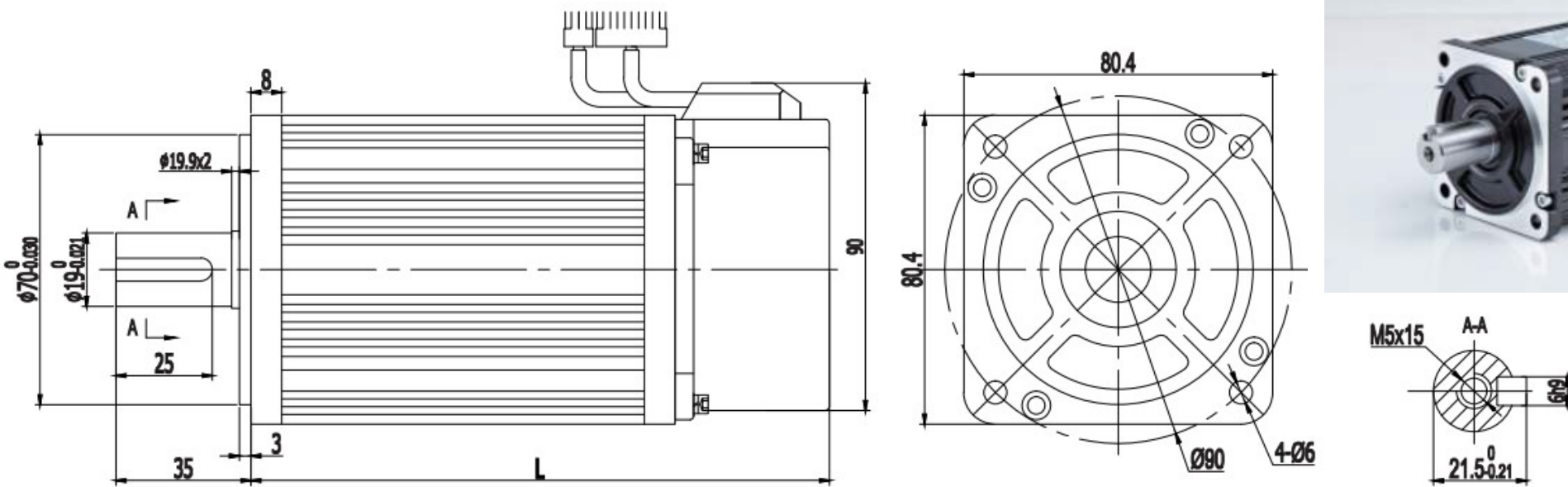


SPECIFICATIONS

| Motor Model | ATO60CST-M00630 | ATO60CST-M01330 | ATO60CST-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.M ²) | 0.175x10 ⁻⁴ | 0.29x10 ⁻⁴ | 0.39x10 ⁻⁴ |
| 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°C ~ +40°C | |
| 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

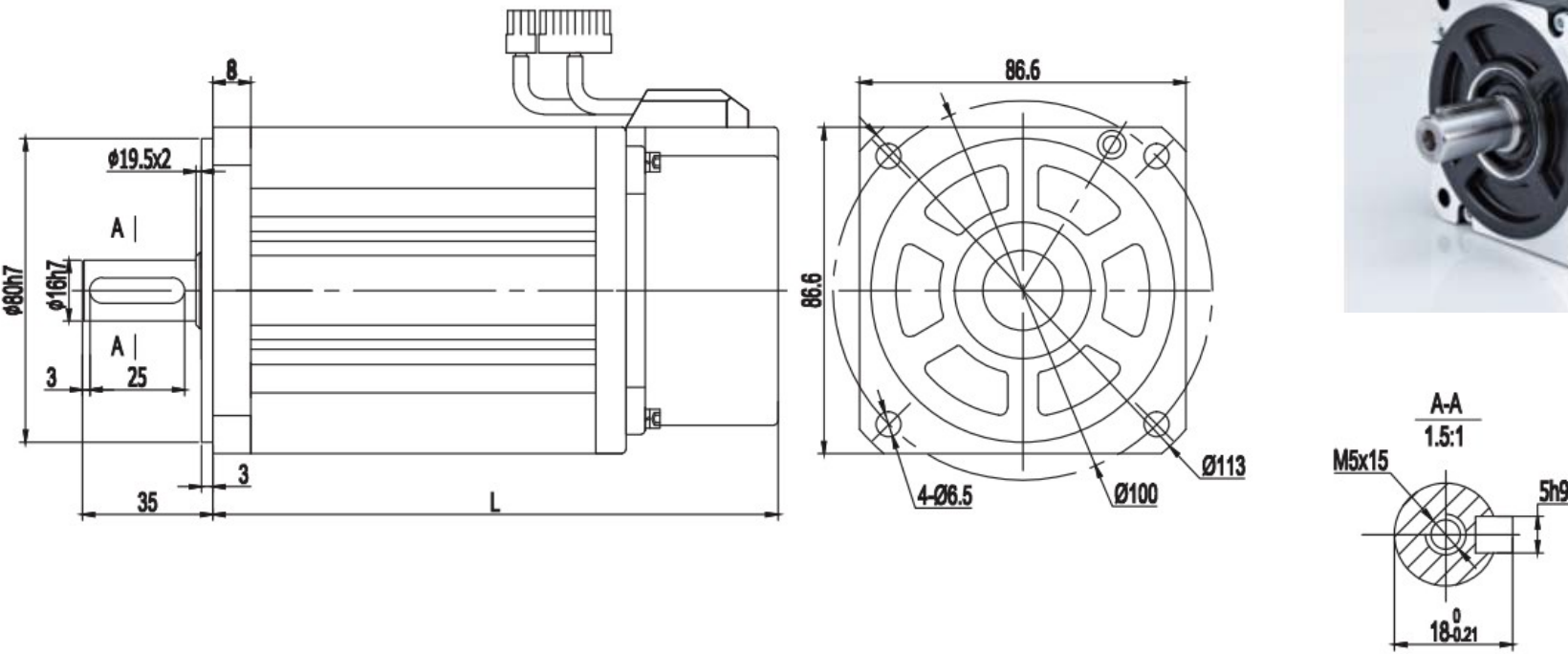


SPECIFICATIONS

| Motor Model | ATO80ST-M01330 | ATO80ST-M02430 | ATO80ST-M00330 | ATO80ST-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 ²) | 1.05x10 ⁻⁴ | 1.82x10 ⁻⁴ | 2.63x10 ⁻⁴ | 2.97x10 ⁻⁴ |
| 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°C ~ +40°C | | | |
| 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

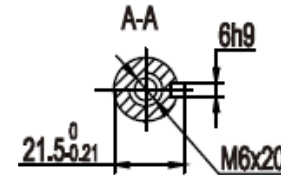
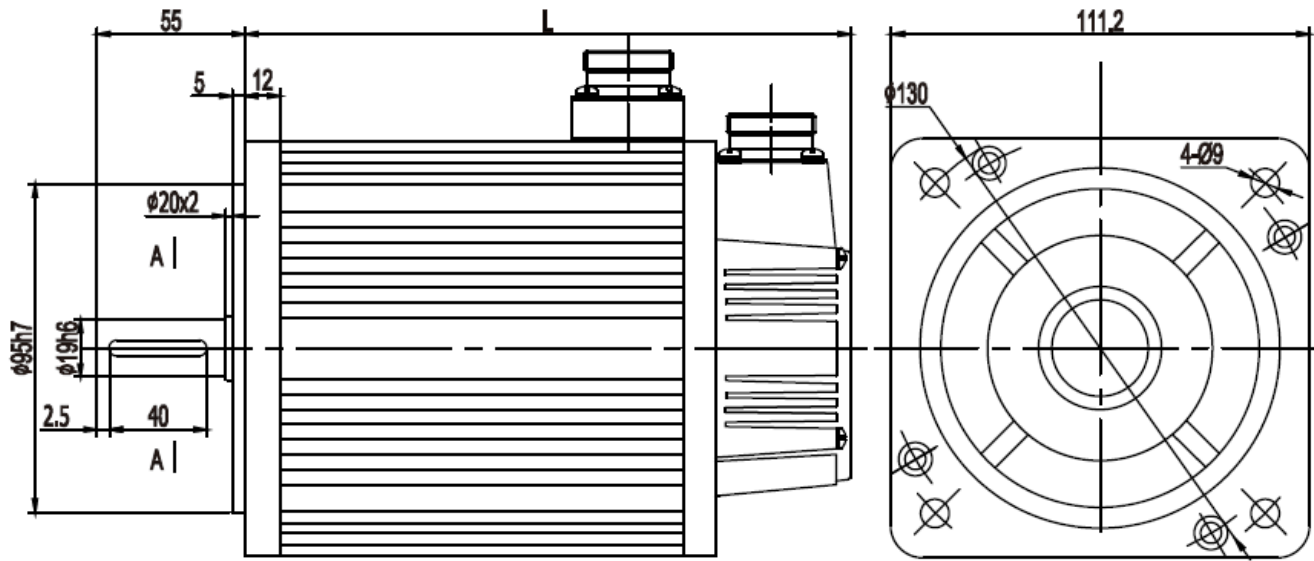


SPECIFICATIONS

| Motor Model | ATO90ST-M02430 | ATO90ST-M03520 | ATO90ST-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 ²) | 2.45x10 ⁻⁴ | 3.4x10 ⁻⁴ | 3.7x10 ⁻⁴ |
| Line-Line Resistance (Ω) | 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°C ~ +40°C | |
| 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

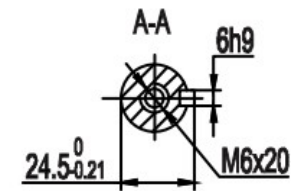
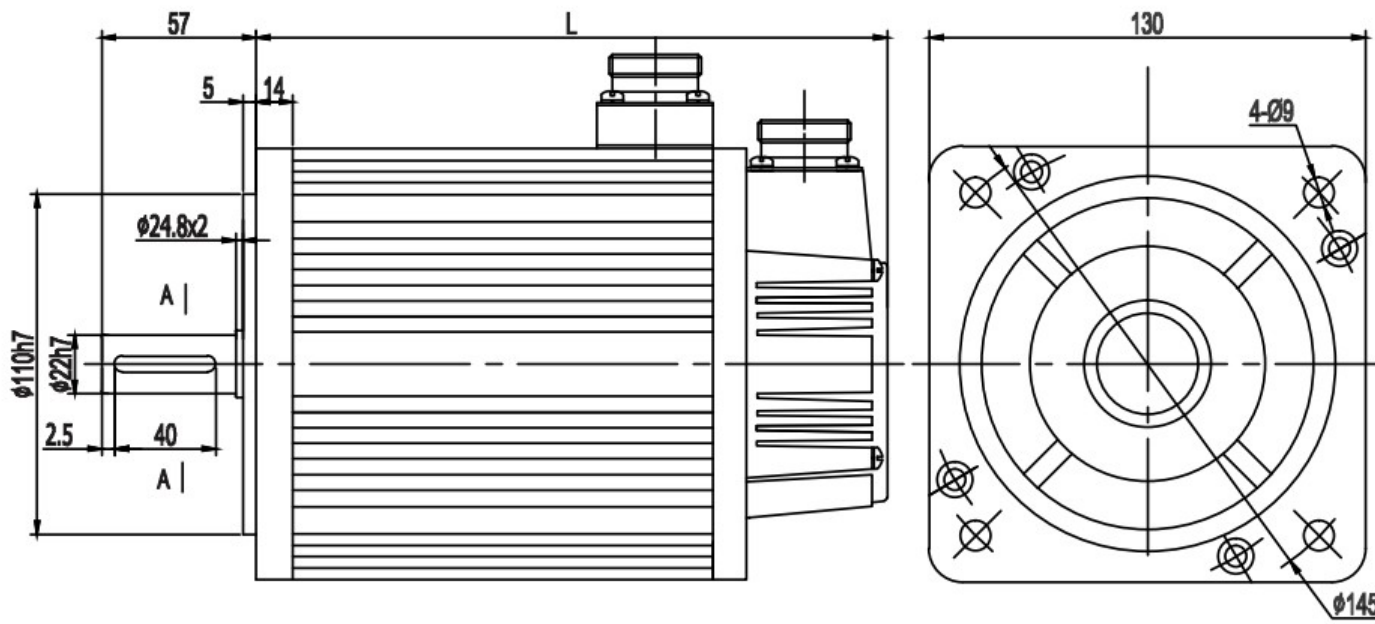


SPECIFICATIONS

| Motor Model | ATO110ST-M04020 | ATO110ST-M04030 | ATO110ST-M05030 | ATO110ST-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 ²) | 0.54x10 ⁻³ | 0.54x10 ⁻³ | 0.63x10 ⁻³ | 0.76x10 ⁻³ |
| 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°C ~ +40°C | | | |
| 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

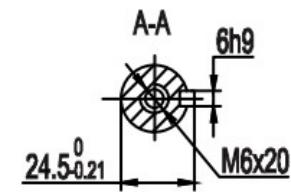
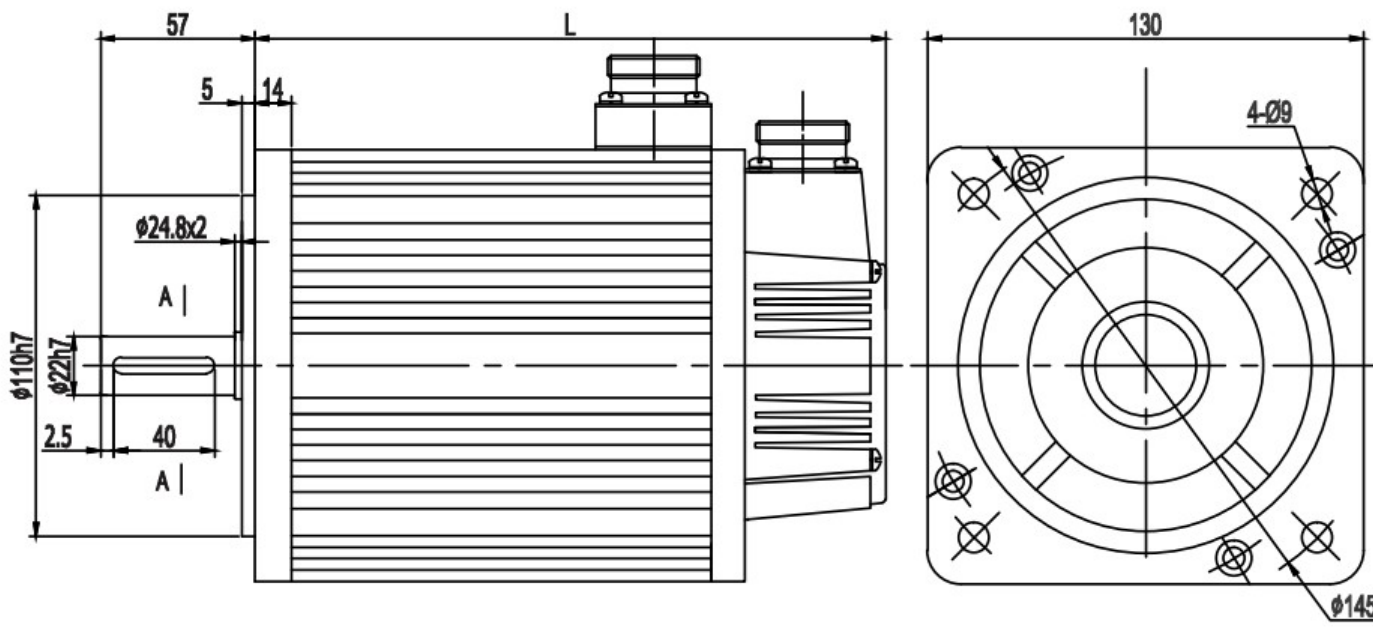


SPECIFICATIONS

| Motor Model | ATO130ST-M04025 | ATO130ST-M05025 | ATO130ST-M06025 | ATO130ST-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 ²) | 0.85x10 ⁻³ | 1.06x10 ⁻³ | 1.26x10 ⁻³ | 1.53x10 ⁻³ |
| 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°C ~ +40°C | | | |
| 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

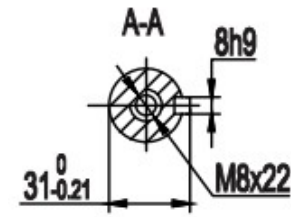
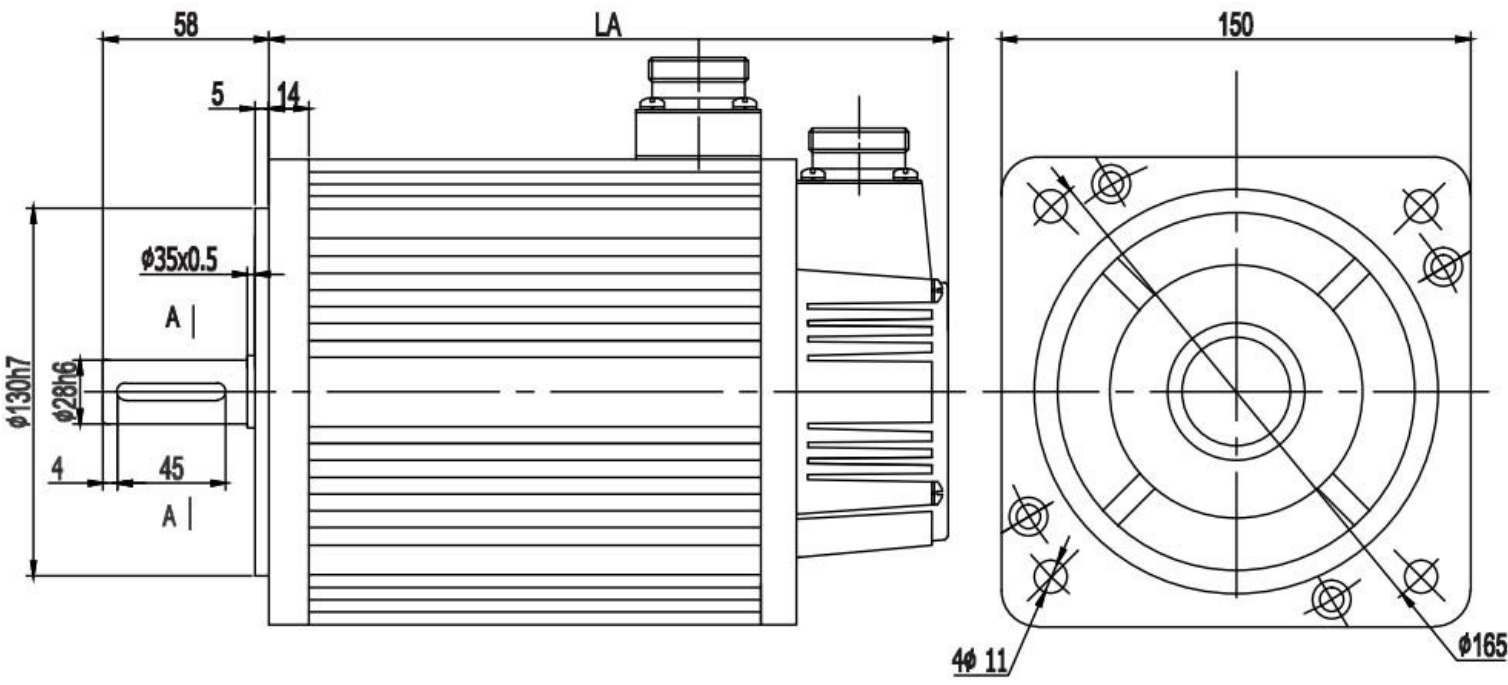


SPECIFICATIONS

| Motor Model | ATO130ST-M10015 | ATO130ST-M10025 | ATO130ST-M15015 | ATO130ST-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 ²) | 1.94x10 ⁻³ | 1.94x10 ⁻³ | 2.77x10 ⁻³ | 2.77x10 ⁻³ |
| Line-Line Resistance (Ω) | 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°C ~ +40°C | | | |
| 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

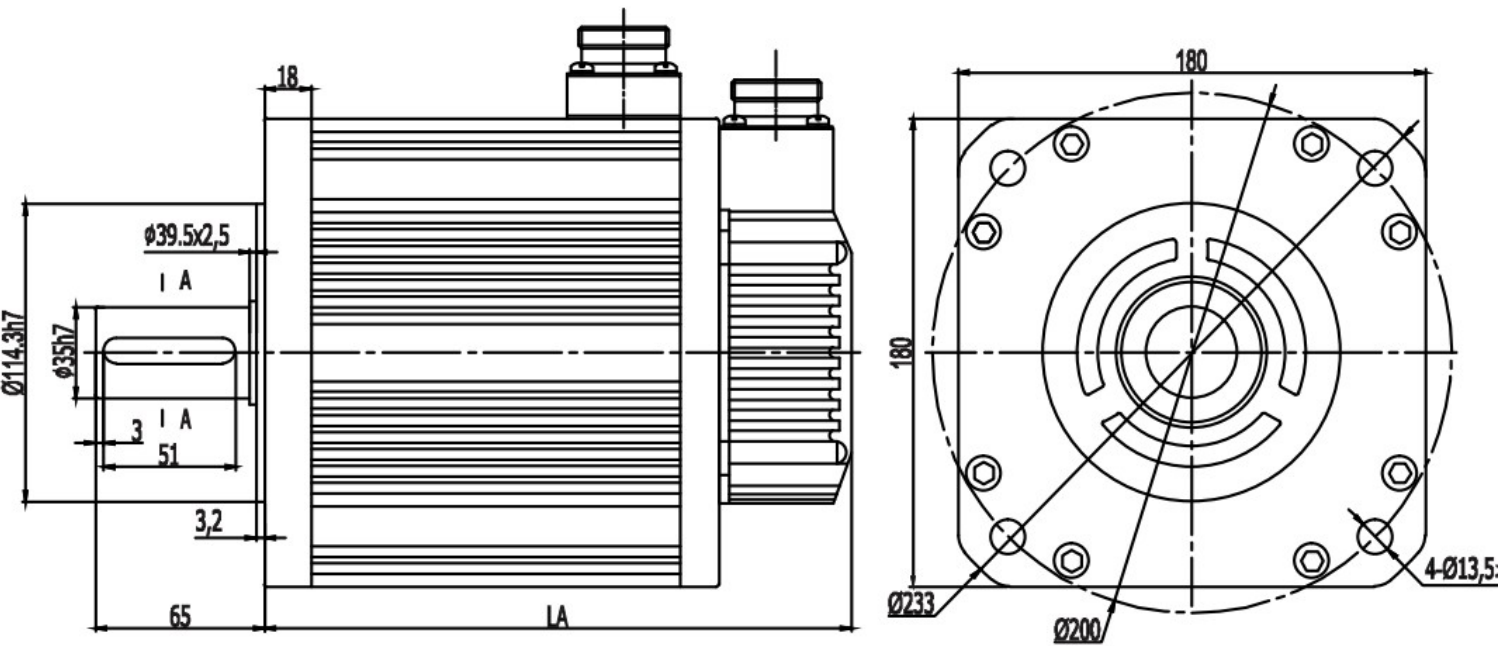


SPECIFICATIONS

| Motor Model | ATO150ST-M15020 | ATO150ST-M18020 | ATO150ST-M23020 | ATO150ST-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 ²) | 3.88x10 ⁻³ | 4.6x10 ⁻³ | 5.8x10 ⁻³ | 6.8x10 ⁻³ |
| Line-Line Resistance (Ω) | 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°C ~ +40°C | | | |
| 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

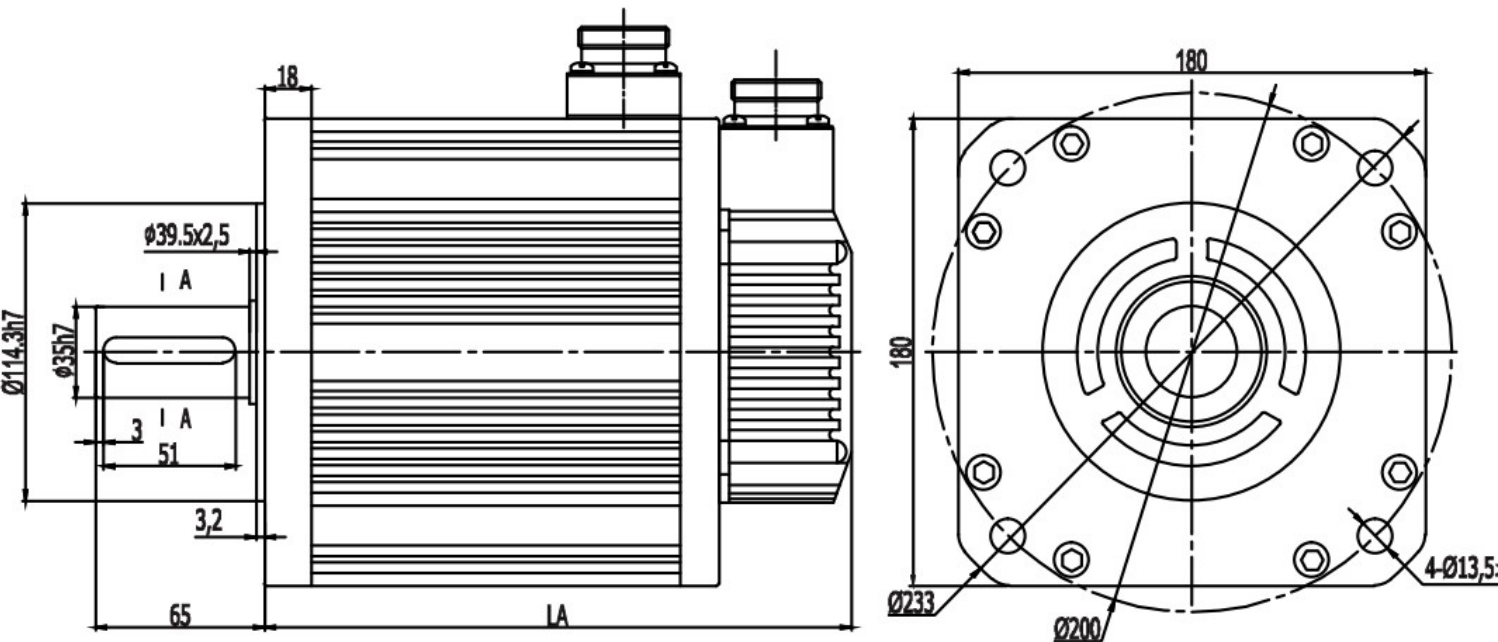


SPECIFICATIONS

| Motor Model | ATO180ST-M17215 | | ATO180ST-M19015 | | ATO180ST-M21520 | | ATO180ST-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.M ²) | 6.5x10 ⁻³ | | 7.0x10 ⁻³ | | 7.96x10 ⁻³ | | 9.64x10 ⁻³ | |
| 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°C ~ +40°C | | | | | | | |
| 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 | ATO180ST-M27015 | | ATO180ST-M35010 | | ATO180ST-M35015 | | ATO180ST-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.M ²) | 9.64x10 ⁻³ | | 12.25x10 ⁻³ | | 12.25x10 ⁻³ | | 16.72x10 ⁻³ | |
| 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°C ~ +40°C | | | | | | | |
| 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 | |