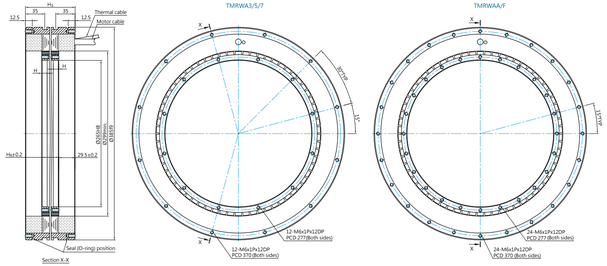
# TMRWAx

## Specifications

| | Symbol | Unit | TMRWA3 | TMRWA3L | TMRWA5 | TMRWA5L | TMRWA7 | TMRWA7L | TMRWAA | TMRWAAL | TMRWAF | TMRWAFL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Continuous torque ( Free air convection) | $T_C$ | Nm | 117 | 117 | 195 | 195 | 274 | 274 | 390 | 390 | 585 | 585 |
| Continuous current ( Free air convection) | $I_C$ | $A_{rms}$ | 6 | 12 | 6 | 12 | 12 | 18 | 12 | 18 | 18 | 24 |
| Continuous torque (WC) | $T_C$ | Nm | 260 | 260 | 430 | 430 | 600 | 600 | 860 | 860 | 1290 | 1290 |
| Continuous current (WC) | $I_C$ | $A_{rms}$ | 15 | 30 | 15 | 30 | 30 | 45 | 30 | 45 | 45 | 60 |
| Peak torque(for 1sec.) | $T_P$ | Nm | 490 | 490 | 810 | 810 | 1100 | 1100 | 1600 | 1600 | 2400 | 2400 |
| Peak current(for 1sec.) | $I_P$ | $A_{rms}$ | 40.5 | 81 | 40.5 | 81 | 81 | 121.5 | 81 | 121.5 | 121.5 | 162 |
| Torque constant | $K_t$ | $Nm/A_{rms}$ | 19.57 | 9.79 | 32.6 | 16.32 | 22.84 | 15.23 | 32.63 | 21.75 | 32.63 | 24.45 |
| Electrical time constant | $T_e$ | ms | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Resistance (line to line at 25°C) | $R_{25}$ | Ω | 3.57 | 0.89 | 5.95 | 1.48 | 2.08 | 0.92 | 2.97 | 1.32 | 1.98 | 1.11 |
| Inductance (line to line) | L | mH | 35.7 | 8.93 | 59.5 | 14.88 | 20.84 | 9.26 | 29.76 | 13.23 | 19.85 | 11.11 |
| Number of poles | 2p | | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 |
| Back emf constant (line to line) | $K_e$ | $V_{rms}$/rad/s | 11.3 | 5.65 | 18.8 | 9.42 | 13.18 | 8.79 | 18.83 | 12.55 | 18.83 | 14.12 |
| Motor constant (at 25°C) | $K_m$ | N/√W | 8.46 | 8.47 | 10.91 | 10.95 | 12.93 | 12.96 | 15.46 | 15.46 | 18.93 | 18.95 |
| Thermal resistance ( Free air convection) | $R_{th}$ | °C/W | 0.49 | 0.49 | 0.3 | 0.3 | 0.21 | 0.21 | 0.15 | 0.15 | 0.1 | 0.1 |
| Thermal resistance ( WC) | $R_{th}$ | °C/W | 0.079 | 0.079 | 0.047 | 0.048 | 0.034 | 0.034 | 0.024 | 0.024 | 0.016 | 0.016 |
| Thermal sensor | | | PTC SNM100+SNM120+KTY84 | | | | | | | | | |
| Max. DC BUS | | $V_{DC}$ | 600 | | | | | | | | | |
| Inertia of rotor | J | $kgm^2$ | 0.065 | 0.065 | 0.1 | 0.1 | 0.15 | 0.15 | 0.21 | 0.21 | 0.32 | 0.32 |
| Max. speed at conti. Torque (AC) | | rpm | 250 | 510 | 140 | 300 | 210 | 320 | 140 | 220 | 140 | 200 |
| Max. speed at conti. Torque (WC) | | rpm | 160 | 340 | 90 | 200 | 135 | 210 | 90 | 140 | 92 | 125 |
| Max. speed at max. Torque | | rpm | 65 | 150 | 35 | 80 | 55 | 90 | 35 | 60 | 35 | 50 |
| Mass of rotor | | kg | 3.1 | 3.1 | 5.1 | 5.1 | 7.1 | 7.1 | 10.2 | 10.2 | 15.3 | 15.3 |
| Mass of stator | | kg | 20.1 | 20.1 | 26.8 | 26.8 | 34.5 | 34.5 | 44.9 | 44.9 | 63.1 | 63.1 |
| Height of stator | $H_S$ | mm | 90 | 90 | 110 | 110 | 130 | 130 | 160 | 160 | 210 | 210 |
| Height of rotor | $H_R$ | mm | 31 | 31 | 51 | 51 | 71 | 71 | 101 | 101 | 151 | 151 |
| Length | H | mm | 10 | 10 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |

WC: with water cooling
Except dimensions, all the specifications in the table are in ±10% of tolerance.
Note: The specification is estimative value. The value will be modified and correct after measuring motors.

## Dimensions











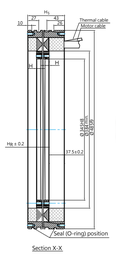

# TMRWDx

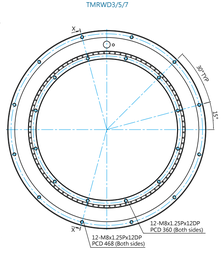
## Specifications

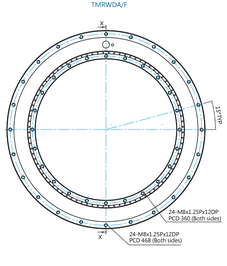
| | Symbol | Unit | TMRWD3 | TMRWD3L | TMRWD5 | TMRWD5L | TMRWD7 | TMRWD7L | TMRWDA | TMRWDAL | TMRWDF | TMRWDFL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Continuous torque ( Free air convection) | $T_C$ | Nm | 185 | 185 | 310 | 310 | 430 | 430 | 619 | 619 | 925 | 925 |
| Continuous current ( Free air convection) | $I_C$ | $A_{rms}$ | 12 | 24 | 12 | 24 | 12 | 24 | 12 | 24 | 24 | 48 |
| Continuous torque (WC) | $T_C$ | Nm | 400 | 400 | 660 | 660 | 930 | 930 | 1340 | 1340 | 2000 | 2000 |
| Continuous current (WC) | $I_C$ | $A_{rms}$ | 30 | 60 | 30 | 60 | 30 | 60 | 30 | 60 | 60 | 120 |
| Peak torque(for 1sec.) | $T_P$ | Nm | 750 | 750 | 1230 | 1230 | 1760 | 1760 | 2470 | 2470 | 3600 | 3600 |
| Peak current(for 1sec.) | $I_P$ | $A_{rms}$ | 81 | 162 | 81 | 162 | 81 | 162 | 81 | 162 | 162 | 324 |
| Torque constant | $K_t$ | $Nm/A_{rms}$ | 15.48 | 7.74 | 25.8 | 12.9 | 36.11 | 18.1 | 51.6 | 25.8 | 38.7 | 19.35 |
| Electrical time constant | $T_e$ | ms | 7 | 7 | 7 | 8 | 7 | 7 | 7 | 7 | 7 | 7 |
| Resistance (line to line at 25°C) | $R_{25}$ | Ω | 1.57 | 0.39 | 2.31 | 0.59 | 3.04 | 0.76 | 4.14 | 1.04 | 1.59 | 0.37 |
| Inductance (line to line) | L | mH | 11.13 | 2.78 | 16.3 | 4.78 | 21.5 | 5.38 | 29.3 | 7.33 | 10.57 | 2.64 |
| Number of poles | 2p | | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Back emf constant (line to line) | $K_e$ | $V_{rms}$/rad/s | 8.94 | 4.47 | 14.9 | 7.45 | 20.85 | 10.43 | 29.8 | 14.9 | 22.35 | 11.18 |
| Motor constant (at 25°C) | $K_m$ | N/√W | 10.05 | 10.04 | 13.88 | 13.68 | 16.78 | 16.78 | 20.70 | 20.70 | 24.96 | 25.76 |
| Thermal resistance ( Free air convection) | $R_{th}$ | °C/W | 0.28 | 0.28 | 0.19 | 0.19 | 0.14 | 0.14 | 0.11 | 0.11 | 0.07 | 0.07 |
| Thermal resistance ( WC) | $R_{th}$ | °C/W | 0.045 | 0.045 | 0.030 | 0.030 | 0.023 | 0.023 | 0.017 | 0.017 | 0.011 | 0.012 |
| Thermal sensor | | | PTC SNM100+SNM120+KTY84 | | | | | | | | | |
| Max. DC BUS | | $V_{DC}$ | 600 | | | | | | | | | |
| Inertia of rotor | J | $kgm^2$ | 0.16 | 0.16 | 0.26 | 0.26 | 0.37 | 0.37 | 0.53 | 0.53 | 0.8 | 0.8 |
| Max. speed at conti. Torque (AC) | | rpm | 300 | 630 | 180 | 390 | 130 | 275 | 90 | 19 | 125 | 260 |
| Max. speed at conti. Torque (WC) | | rpm | 200 | 420 | 120 | 250 | 85 | 190 | 60 | 133 | 80 | 190 |
| Max. speed at max. Torque | | rpm | 85 | 175 | 50 | 115 | 30 | 85 | 18 | 60 | 30 | 80 |
| Mass of rotor | | kg | 5.5 | 5.5 | 9.2 | 9.2 | 12.8 | 12.8 | 18.3 | 18.3 | 27.4 | 27.4 |
| Mass of stator | | kg | 22.8 | 22.8 | 38 | 38 | 53.2 | 53.2 | 76 | 76 | 114 | 114 |
| Height of stator | $H_S$ | mm | 90 | 90 | 110 | 110 | 130 | 130 | 160 | 160 | 210 | 210 |
| Height of rotor | $H_R$ | mm | 31 | 31 | 51 | 51 | 71 | 71 | 101 | 101 | 151 | 151 |
| Length | H | mm | 10 | 10 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |

WC: with water cooling
Except dimensions, all the specifications in the table are in ±10% of tolerance.
Note: The specification is estimative value. The value will be modified and correct after measuring motors.

## Dimensions



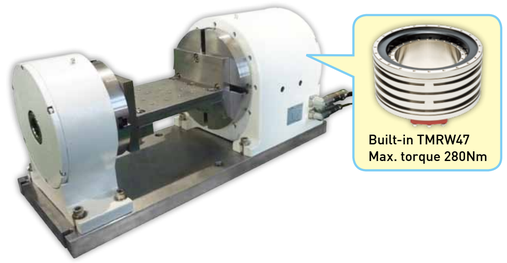






# Applications

Rotary table/Indexing table




*The specifications in this catalog are subject to change without notification.

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HIWIN®
Motion Control and System Technology

# Torque Motor

## TMRW Series

- Frameless
- Water cooling
- Large hollow shaft

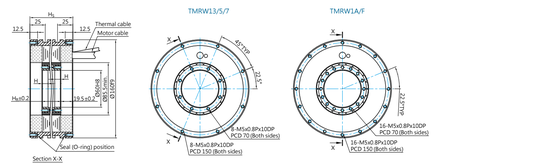
# TMRW1x

## Specifications

| | Symbol | Unit | TMRW13 | TMRW13L | TMRW15 | TMRW15L | TMRW17 | TMRW17L | TMRW1A | TMRW1AL | TMRW1F | TMRW1FL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Continuous torque ( Free air convection) | $T_C$ | Nm | 7.5 | 7.5 | 12.4 | 12.4 | 17.4 | 17.4 | 24.9 | 24.9 | 37.3 | 37.3 |
| Continuous current ( Free air convection) | $I_C$ | $A_{rms}$ | 4 | 5.7 | 4 | 5.7 | 4 | 5.7 | 4 | 5.7 | 5.7 | 11.4 |
| Continuous torque (WC) | $T_C$ | Nm | 18.8 | 18.8 | 31.3 | 31.3 | 43.8 | 43.8 | 62.5 | 62.5 | 93.8 | 93.8 |
| Continuous current (WC) | $I_C$ | $A_{rms}$ | 10 | 14.4 | 10 | 14.4 | 10 | 14.4 | 10 | 14.4 | 14.4 | 28.8 |
| Peak torque(for 1sec.) | $T_P$ | Nm | 35.6 | 35.6 | 59.4 | 59.4 | 83.1 | 83.1 | 118.8 | 118.8 | 178.1 | 178.1 |
| Peak current(for 1sec.) | $I_P$ | $A_{rms}$ | 27 | 38.9 | 27 | 38.9 | 27 | 38.9 | 27 | 38.9 | 38.9 | 77.8 |
| Torque constant | $K_t$ | $Nm/A_{rms}$ | 1.87 | 1.32 | 3.1 | 2.18 | 4.36 | 3.06 | 6.23 | 4.36 | 6.55 | 3.27 |
| Electrical time constant | $T_e$ | ms | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 |
| Resistance (line to line at 25℃) | $R_{25}$ | Ω | 2.92 | 1.42 | 4.88 | 2.36 | 6.83 | 3.32 | 9.75 | 4.74 | 7.11 | 1.78 |
| Inductance (line to line) | L | mH | 10.5 | 5.1 | 17.5 | 9 | 24.5 | 11.9 | 35 | 17.01 | 25.52 | 6.38 |
| Number of poles | 2p | | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 |
| Back emf constant (line to line) | $K_e$ | $V_{rms}/rad/s$ | 1.08 | 0.76 | 1.8 | 1.26 | 2.52 | 1.76 | 3.6 | 2.52 | 3.78 | 1.89 |
| Motor constant (at 25℃) | $K_m$ | $N/\sqrt{W}$ | 0.89 | 0.9 | 1.15 | 1.16 | 1.36 | 1.37 | 1.63 | 1.64 | 2.01 | 2 |
| Thermal resistance ( Free air convection) | $R_{th}$ | ℃/W | 1.36 | 1.37 | 0.81 | 0.83 | 0.58 | 0.59 | 0.41 | 0.41 | 0.27 | 0.27 |
| Thermal resistance ( WC) | $R_{th}$ | ℃/W | 0.217 | 0.215 | 0.13 | 0.129 | 0.093 | 0.092 | 0.065 | 0.064 | 0.043 | 0.043 |
| Thermal sensor | | | PTC SNM100+SNM120+KTY84 | | | | | | | | | |
| Max. DC BUS | | $V_{dc}$ | 600 | | | | | | | | | |
| Inertia of rotor | J | $kgm^2$ | 0.001 | 0.001 | 0.0016 | 0.0016 | 0.0023 | 0.0023 | 0.0033 | 0.0033 | 0.0049 | 0.0049 |
| Max. speed at conti. Torque (AC) | | rpm | 2800 | 4000 | 1600 | 2400 | 1150 | 1700 | 800 | 1170 | 760 | 1600 |
| Max. speed at conti. Torque (WC) | | rpm | 2200 | 3200 | 1200 | 1750 | 830 | 1590 | 600 | 870 | 540 | 1200 |
| Max. speed at max. Torque | | rpm | 1000 | 1600 | 600 | 830 | 400 | 610 | 580 | 390 | 210 | 560 |
| Mass of rotor | | kg | 0.6 | 0.6 | 1 | 1 | 1.4 | 1.4 | 2 | 2 | 3 | 3 |
| Mass of stator | | kg | 3.7 | 3.7 | 5.1 | 5.1 | 6.2 | 6.2 | 8.6 | 8.6 | 12.2 | 12.2 |
| Height of stator | $H_S$ | mm | 70 | 70 | 90 | 90 | 110 | 110 | 140 | 140 | 190 | 190 |
| Height of rotor | $H_R$ | mm | 31 | 31 | 51 | 51 | 71 | 71 | 101 | 101 | 151 | 151 |
| Length | H | mm | 10 | 10 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |

WC: with water cooling
Except dimensions, all the specifications in the table are in ±10% of tolerance.
Note: The specification is estimative value. The value will be modified and correct after measuring motors.

## Dimensions











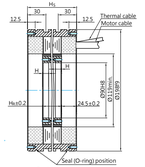

# TMRW2x

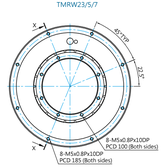
## Specifications

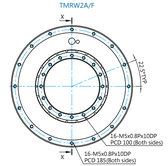
| | Symbol | Unit | TMRW23 | TMRW23L | TMRW25 | TMRW25L | TMRW27 | TMRW27L | TMRW2A | TMRW2AL | TMRW2F | TMRW2FL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Continuous torque ( Free air convection) | $T_C$ | Nm | 14.2 | 14.2 | 23.6 | 23.6 | 33 | 33 | 47.3 | 47.3 | 71 | 71 |
| Continuous current ( Free air convection) | $I_C$ | $A_{rms}$ | 3.3 | 4.9 | 3.3 | 4.9 | 3.3 | 4.9 | 3.3 | 4.9 | 4.9 | 9.9 |
| Continuous torque (WC) | $T_C$ | Nm | 35 | 35 | 59 | 59 | 82.5 | 82.5 | 117.5 | 117.5 | 176 | 176 |
| Continuous current (WC) | $I_C$ | $A_{rms}$ | 8.3 | 12.3 | 8.3 | 12.3 | 8.3 | 12.3 | 8.3 | 12.3 | 12.3 | 24.6 |
| Peak torque(for 1sec.) | $T_P$ | Nm | 66.5 | 66.5 | 112 | 112 | 156 | 156 | 223 | 223 | 334.5 | 334.5 |
| Peak current(for 1sec.) | $I_P$ | $A_{rms}$ | 22.3 | 33.2 | 22.3 | 33.2 | 22.3 | 33.2 | 22.3 | 33.2 | 33.2 | 66.4 |
| Torque constant | $K_t$ | $Nm/A_{rms}$ | 4.29 | 2.88 | 7.16 | 4.8 | 10.03 | 6.72 | 14.32 | 9.6 | 14.39 | 7.2 |
| Electrical time constant | $T_e$ | ms | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 |
| Resistance (line to line at 25℃) | $R_{25}$ | Ω | 3.34 | 1.5 | 5.57 | 2.5 | 7.8 | 3.5 | 11.14 | 5 | 7.49 | 1.87 |
| Inductance (line to line) | L | mH | 21.73 | 9.74 | 36.21 | 16.23 | 50.7 | 22.72 | 72.43 | 32.46 | 48.69 | 12.17 |
| Number of poles | 2p | | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 |
| Back emf constant (line to line) | $K_e$ | $V_{rms}/rad/s$ | 2.48 | 1.66 | 4.13 | 2.77 | 5.79 | 3.88 | 8.27 | 5.54 | 8.31 | 4.15 |
| Motor constant (at 25℃) | $K_m$ | $N/\sqrt{W}$ | 1.92 | 1.92 | 2.48 | 2.48 | 2.93 | 2.93 | 3.5 | 3.51 | 4.29 | 4.3 |
| Thermal resistance ( Free air convection) | $R_{th}$ | ℃/W | 1.74 | 1.74 | 1.04 | 1.04 | 0.75 | 0.74 | 0.52 | 0.52 | 0.35 | 0.35 |
| Thermal resistance ( WC) | $R_{th}$ | ℃/W | 0.279 | 0.279 | 0.167 | 0.167 | 0.119 | 0.12 | 0.084 | 0.084 | 0.056 | 0.056 |
| Thermal sensor | | | PTC SNM100+SNM120+KTY84 | | | | | | | | | |
| Max. DC BUS | | $V_{dc}$ | 600 | | | | | | | | | |
| Inertia of rotor | J | $kgm^2$ | 0.0027 | 0.0027 | 0.0045 | 0.0045 | 0.0063 | 0.0063 | 0.009 | 0.009 | 0.013 | 0.013 |
| Max. speed at conti. Torque (AC) | | rpm | 1260 | 1900 | 750 | 1130 | 525 | 800 | 360 | 550 | 360 | 740 |
| Max. speed at conti. Torque (WC) | | rpm | 1060 | 1600 | 610 | 950 | 420 | 660 | 280 | 440 | 275 | 610 |
| Max. speed at max. Torque | | rpm | 590 | 900 | 330 | 525 | 210 | 360 | 125 | 225 | 120 | 330 |
| Mass of rotor | | kg | 0.95 | 0.95 | 1.6 | 1.6 | 2.2 | 2.2 | 3.2 | 3.2 | 4.8 | 4.8 |
| Mass of stator | | kg | 6.1 | 6.1 | 8.4 | 8.4 | 10.2 | 10.2 | 14.2 | 14.2 | 20.1 | 20.1 |
| Height of stator | $H_S$ | mm | 80 | 80 | 100 | 100 | 120 | 120 | 150 | 150 | 200 | 200 |
| Height of rotor | $H_R$ | mm | 31 | 31 | 51 | 51 | 71 | 71 | 101 | 101 | 151 | 151 |
| Length | H | mm | 10 | 10 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |

WC: with water cooling
Except dimensions, all the specifications in the table are in ±10% of tolerance.
Note: The specification is estimative value. The value will be modified and correct after measuring motors.

## Dimensions





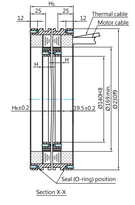

# TMRW4x

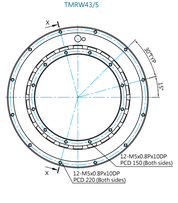
## Specifications

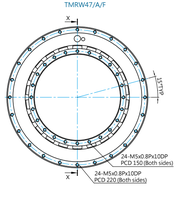
| | Symbol | Unit | TMRW43 | TMRW43L | TMRW45 | TMRW45L | TMRW47 | TMRW47L | TMRW4A | TMRW4AL | TMRW4F | TMRW4FL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Continuous torque ( Free air convection) | $T_C$ | Nm | 28.2 | 28.2 | 47 | 47 | 65 | 65 | 91 | 91 | 136 | 136 |
| Continuous current ( Free air convection) | $I_C$ | $A_{rms}$ | 4 | 8 | 4 | 8 | 4 | 8 | 8 | 12 | 8 | 12 |
| Continuous torque (WC) | $T_C$ | Nm | 63.5 | 63.5 | 106 | 106 | 148 | 148 | 205 | 205 | 307 | 307 |
| Continuous current (WC) | $I_C$ | $A_{rms}$ | 9 | 18 | 9 | 18 | 9 | 18 | 18 | 27 | 18 | 27 |
| Peak torque(for 1sec.) | $T_P$ | Nm | 120 | 120 | 203 | 203 | 280 | 280 | 390 | 390 | 583 | 583 |
| Peak current(for 1sec.) | $I_P$ | $A_{rms}$ | 24.3 | 48.6 | 24.3 | 48.6 | 24.3 | 48.6 | 48.6 | 72.9 | 48.6 | 72.9 |
| Torque constant | $K_t$ | $Nm/A_{rms}$ | 7.06 | 3.53 | 11.76 | 5.88 | 16.47 | 8.23 | 11.76 | 7.61 | 17.65 | 11.42 |
| Electrical time constant | $T_e$ | ms | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Resistance (line to line at 25℃) | $R_{25}$ | Ω | 2.93 | 0.73 | 4.88 | 1.22 | 6.83 | 1.7 | 2.44 | 1.06 | 3.66 | 1.58 |
| Inductance (line to line) | L | mH | 15.3 | 3.83 | 25.5 | 6.38 | 35.7 | 8.93 | 12.75 | 5.52 | 19.13 | 8.28 |
| Number of poles | 2p | | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 |
| Back emf constant (line to line) | $K_e$ | $V_{rms}/rad/s$ | 4.08 | 2.04 | 6.8 | 3.4 | 9.5 | 4.75 | 6.79 | 4.39 | 10.19 | 6.59 |
| Motor constant (at 25℃) | $K_m$ | $N/\sqrt{W}$ | 3.36 | 3.37 | 4.34 | 4.34 | 5.08 | 5.09 | 5.95 | 6.01 | 7.26 | 7.36 |
| Thermal resistance ( Free air convection) | $R_{th}$ | ℃/W | 1.35 | 1.36 | 0.81 | 0.81 | 0.58 | 0.58 | 0.41 | 0.41 | 0.27 | 0.28 |
| Thermal resistance ( WC) | $R_{th}$ | ℃/W | 0.267 | 0.268 | 0.160 | 0.160 | 0.114 | 0.115 | 0.080 | 0.082 | 0.053 | 0.055 |
| Thermal sensor | | | PTC SNM100+SNM120+KTY84 | | | | | | | | | |
| Max. DC BUS | | $V_{dc}$ | 600 | | | | | | | | | |
| Inertia of rotor | J | $kgm^2$ | 0.0085 | 0.0085 | 0.014 | 0.014 | 0.022 | 0.022 | 0.029 | 0.029 | 0.045 | 0.045 |
| Max. speed at conti. Torque (AC) | | rpm | 790 | 1600 | 460 | 950 | 320 | 670 | 460 | 730 | 300 | 470 |
| Max. speed at conti. Torque (WC) | | rpm | 730 | 1500 | 420 | 890 | 290 | 620 | 420 | 680 | 260 | 440 |
| Max. speed at max. Torque | | rpm | 540 | 1100 | 290 | 660 | 180 | 450 | 300 | 500 | 160 | 300 |
| Mass of rotor | | kg | 1.4 | 1.4 | 2.4 | 2.4 | 3.3 | 3.3 | 4.7 | 4.7 | 7.1 | 7.1 |
| Mass of stator | | kg | 5.8 | 5.8 | 7.8 | 7.8 | 9.6 | 9.6 | 12.7 | 12.7 | 18.7 | 18.7 |
| Height of stator | $H_S$ | mm | 70 | 70 | 90 | 90 | 110 | 110 | 140 | 140 | 190 | 190 |
| Height of rotor | $H_R$ | mm | 31 | 31 | 51 | 51 | 71 | 71 | 101 | 101 | 151 | 151 |
| Length | H | mm | 10 | 10 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |

WC: with water cooling
Except dimensions, all the specifications in the table are in ±10% of tolerance.
Note: The specification is estimative value. The value will be modified and correct after measuring motors.

## Dimensions






# TMRW7x

## Specifications

| | Symbol | Unit | TMRW73 | TMRW73L | TMRW75 | TMRW75L | TMRW77 | TMRW77L | TMRW7A | TMRW7AL | TMRW7F | TMRW7FL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Continuous torque ( Free air convection) | $T_C$ | Nm | 58 | 58 | 98 | 98 | 137 | 137 | 195 | 195 | 293 | 293 |
| Continuous current ( Free air convection) | $I_C$ | $A_{rms}$ | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 |
| Continuous torque (WC) | $T_C$ | Nm | 145 | 145 | 240 | 240 | 335 | 335 | 480 | 480 | 720 | 720 |
| Continuous current (WC) | $I_C$ | $A_{rms}$ | 15 | 30 | 15 | 30 | 15 | 30 | 15 | 30 | 15 | 30 |
| Peak torque(for 1sec.) | $T_P$ | Nm | 275 | 275 | 456 | 456 | 640 | 640 | 910 | 910 | 1360 | 1360 |
| Peak current(for 1sec.) | $I_P$ | $A_{rms}$ | 40.5 | 81 | 40.5 | 81 | 40.5 | 81 | 40.5 | 81 | 40.5 | 81 |
| Torque constant | $K_t$ | $Nm/A_{rms}$ | 9.77 | 4.89 | 16.3 | 8.15 | 22.8 | 11.4 | 32.56 | 16.28 | 48.85 | 24.45 |
| Electrical time constant | $T_e$ | ms | 5.6 | 5.6 | 5.6 | 5.6 | 5.6 | 5.6 | 5.6 | 5.6 | 5.6 | 5.6 |
| Resistance (line to line at 25℃) | $R_{25}$ | Ω | 2.86 | 0.72 | 4.19 | 1.05 | 5.52 | 1.38 | 7.52 | 1.88 | 10.84 | 2.71 |
| Inductance (line to line) | L | mH | 16 | 4 | 23.45 | 5.86 | 30.9 | 7.73 | 42.07 | 10.52 | 60.68 | 15.17 |
| Number of poles | 2p | | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 |
| Back emf constant (line to line) | $K_e$ | $V_{rms}/rad/s$ | 5.64 | 2.82 | 9.4 | 4.7 | 13.2 | 6.6 | 18.8 | 9.4 | 28.2 | 14.1 |
| Motor constant (at 25℃) | $K_m$ | $N/\sqrt{W}$ | 4.72 | 4.71 | 6.5 | 6.49 | 7.92 | 7.92 | 9.69 | 9.69 | 12.11 | 12.13 |
| Thermal resistance ( Free air convection) | $R_{th}$ | ℃/W | 0.62 | 0.61 | 0.42 | 0.42 | 0.32 | 0.32 | 0.23 | 0.23 | 0.16 | 0.16 |
| Thermal resistance ( WC) | $R_{th}$ | ℃/W | 0.098 | 0.098 | 0.067 | 0.067 | 0.051 | 0.051 | 0.037 | 0.037 | 0.026 | 0.026 |
| Thermal sensor | | | PTC SNM100+SNM120+KTY84 | | | | | | | | | |
| Max. DC BUS | | $V_{dc}$ | 600 | | | | | | | | | |
| Inertia of rotor | J | $kgm^2$ | 0.023 | 0.023 | 0.039 | 0.039 | 0.059 | 0.059 | 0.079 | 0.079 | 0.11 | 0.11 |
| Max. speed at conti. Torque (AC) | | rpm | 560 | 1130 | 325 | 675 | 225 | 475 | 160 | 325 | 100 | 210 |
| Max. speed at conti. Torque (WC) | | rpm | 470 | 980 | 270 | 580 | 180 | 400 | 115 | 275 | 72 | 170 |
| Max. speed at max. Torque | | rpm | 270 | 580 | 150 | 340 | 90 | 230 | 50 | 150 | 13 | 85 |
| Mass of rotor | | kg | 2.5 | 2.5 | 4.1 | 4.1 | 5.7 | 5.7 | 8.1 | 8.1 | 12.1 | 12.1 |
| Mass of stator | | kg | 14.2 | 14.2 | 18.9 | 18.9 | 23.7 | 23.7 | 30.9 | 30.9 | 43.6 | 43.6 |
| Height of stator | $H_S$ | mm | 80 | 80 | 100 | 100 | 120 | 120 | 150 | 150 | 200 | 200 |
| Height of rotor | $H_R$ | mm | 31 | 31 | 51 | 51 | 71 | 71 | 101 | 101 | 151 | 151 |
| Length | H | mm | 10 | 10 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |

WC: with water cooling
Except dimensions, all the specifications in the table are in ±10% of tolerance.
Note: The specification is estimative value. The value will be modified and correct after measuring motors.

## Dimensions