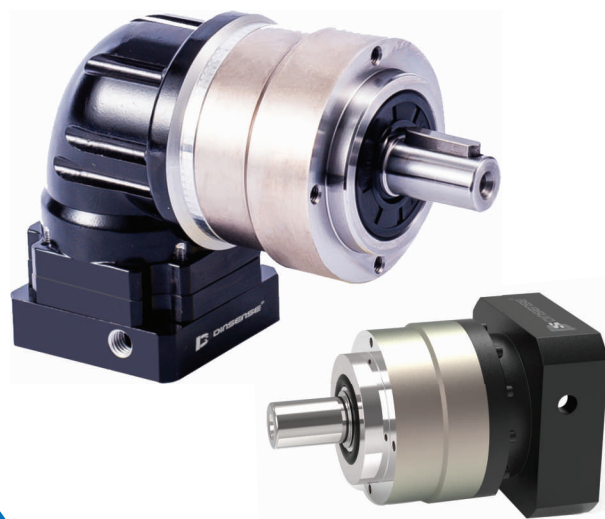




超靜音  
**Quiet Operation**

採用斜齒設計，高嚙合率，運轉順暢，低噪音。  
Helical gears contribute to reduce vibration and noise.

高精度  
**High Precision**

採用螺旋齒輪設計及通過對螺旋齒面作齒形及導程修整，將太陽齒輪的軸承直接裝高於臂架內，提高齒輪系的運轉精度，實現定位精準。

高扭矩、高剛性  
**High Torque & Rigidity**

Using helical gear design, through the helical gear tooth surface for tooth profile and lead modification. The sun gear bearing is placed directly into the planetary arm bracket, the overall mechanical structure designed to ensure concentricity of the transmission components.

法蘭，軸套方式  
**Adapter-bushing Connection**

臂架與輸出軸採用一體式結構，大跨距大軸承的設計，可確保最大的扭轉剛性和輸出負載能力。

維護方便、免保養  
**Maintenance-free**

High torque & high rigidity were achieved by the planetary arm bracket and the output shaft are the integrated to increase torsional rigidity and accuracy. The entire structure is one time machined for controlling accuracy in the specified tolerance.

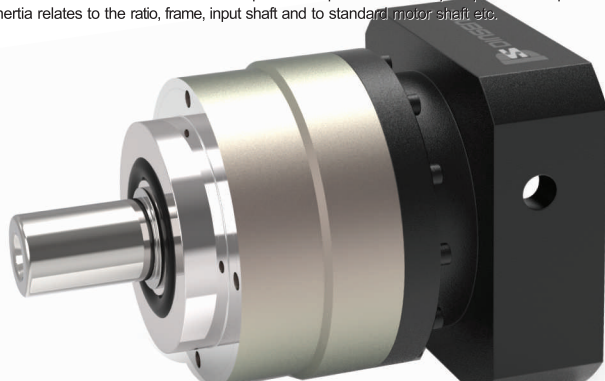
適配于任何品牌的伺服馬達。  
Can be attached to and motor all over the brand.

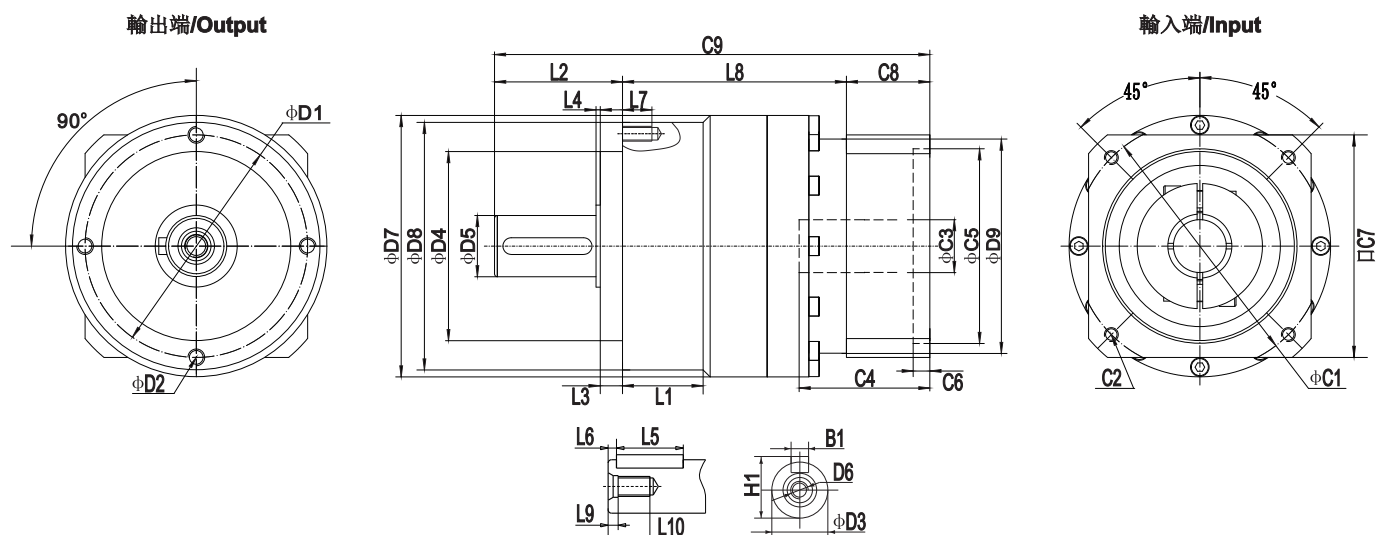
使用合成潤滑油脂，採用IP65防護等級的密封設計。無需更換潤滑油脂，免保養。  
Use the advanced lubricants grease and IP65 protection safeguards fully avoid leaking and given it maintenance-free.

| 項目描述Description                        |                                                    |                   | Z <sup>1</sup> | i <sup>2</sup> | DE 050                                                    | DE 070 | DE 090 | DE 120 | DE 155 | DE 205 | DE 235 |
|----------------------------------------|----------------------------------------------------|-------------------|----------------|----------------|-----------------------------------------------------------|--------|--------|--------|--------|--------|--------|
| 額定輸出扭矩<br>T <sub>2N</sub> <sup>3</sup> | Nominal Output Torque T <sub>2N</sub> <sup>3</sup> | Nm                | 1              | 3              | 20                                                        | 55     | 130    | 208    | 342    | 588    | 1140   |
|                                        |                                                    |                   |                | 4              | 19                                                        | 50     | 140    | 290    | 540    | 1050   | 1700   |
|                                        |                                                    |                   |                | 5              | 22                                                        | 60     | 160    | 330    | 650    | 1200   | 2000   |
|                                        |                                                    |                   |                | 7              | 19                                                        | 50     | 140    | 300    | 550    | 1100   | 1800   |
|                                        |                                                    |                   |                | 10             | 14                                                        | 40     | 100    | 220    | 450    | 900    | 1500   |
|                                        |                                                    |                   | 2              | 15             | 20                                                        | 55     | 130    | 208    | 342    | 588    | 1140   |
|                                        |                                                    |                   |                | 20             | 19                                                        | 50     | 140    | 290    | 540    | 1050   | 1700   |
|                                        |                                                    |                   |                | 25             | 22                                                        | 60     | 160    | 330    | 650    | 1200   | 2000   |
|                                        |                                                    |                   |                | 30             | 20                                                        | 55     | 130    | 208    | 342    | 588    | 1140   |
|                                        |                                                    |                   |                | 35             | 19                                                        | 50     | 140    | 300    | 550    | 1100   | 1800   |
|                                        |                                                    |                   |                | 40             | 17                                                        | 45     | 120    | 290    | 540    | 1050   | 1700   |
|                                        |                                                    |                   |                | 50             | 22                                                        | 60     | 160    | 330    | 650    | 1200   | 2000   |
|                                        |                                                    |                   |                | 70             | 19                                                        | 50     | 140    | 300    | 550    | 1100   | 1800   |
|                                        |                                                    |                   |                | 100            | 14                                                        | 40     | 100    | 220    | 450    | 900    | 1500   |
| 最大輸出扭矩                                 | Max. Output torque                                 | Nm                |                |                | 2.5倍于T <sub>2N</sub> / 2.5 times of Nominal Output Torque |        |        |        |        |        |        |
| 額定輸入轉速                                 | Nominal Input Speed                                | rpm               |                |                | 5000                                                      | 5000   | 4000   | 4000   | 3000   | 3000   | 2000   |
| 最大輸入轉速                                 | Max. Input speed                                   | rpm               |                |                | 10000                                                     | 10000  | 8000   | 8000   | 6000   | 6000   | 4000   |
| 回程間隙                                   | Backlash                                           | B2                | arcmin         | 1              | ≤8                                                        | ≤5     | ≤5     | ≤5     | ≤5     | ≤5     | ≤5     |
|                                        |                                                    | B2                |                | 2              | ≤12                                                       | ≤7     | ≤7     | ≤7     | ≤7     | ≤7     | ≤7     |
|                                        |                                                    | B1                | arcmin         | 1              | -                                                         | ≤3     | ≤3     | ≤3     | ≤3     | ≤3     | ≤3     |
|                                        |                                                    | B1                |                | 2              | -                                                         | ≤5     | ≤5     | ≤5     | ≤5     | ≤5     | ≤5     |
| 抗扭剛性                                   | Torsional Stiffness                                | Nm/arcmin         |                |                | 3                                                         | 7      | 14     | 25     | 50     | 145    | 225    |
| 容許徑向力 <sup>4</sup>                     | Max. Radial Force <sup>4</sup>                     | N                 |                |                | 780                                                       | 1530   | 3250   | 6700   | 9400   | 14500  | 50000  |
| 容許軸向力 <sup>4</sup>                     | Max. Axial Force <sup>4</sup>                      | N                 |                |                | 390                                                       | 630    | 1300   | 3000   | 4000   | 6200   | 25000  |
| 使用壽命                                   | Service Life                                       | Hr                |                |                | 20000(連續運轉降低使用壽命50%)                                      |        |        |        |        |        |        |
| 效率                                     | Efficiency                                         | %                 |                |                | 1 stage ≥ 96%, 2 stage ≥ 94%                              |        |        |        |        |        |        |
| 工作溫度                                   | Operating Temp                                     | °C                |                |                | -10°C ~ +90°C                                             |        |        |        |        |        |        |
| 防護等級                                   | Degree of Protection                               |                   |                |                | IP 65                                                     |        |        |        |        |        |        |
| 安裝方式                                   | Mounting Postion                                   |                   |                |                | 任意/Any Direction                                          |        |        |        |        |        |        |
| 潤滑                                     | Lubrication                                        |                   |                |                | 合成潤滑油脂/Synthetic Lubricating Grease                       |        |        |        |        |        |        |
| 噪音                                     | Noise                                              | dB(A)             |                |                | ≤56                                                       | ≤58    | ≤60    | ≤63    | ≤65    | ≤67    | ≤70    |
| 轉動慣量 <sup>5</sup>                      | Input Shaft Moment of Inertia <sup>5</sup>         | Kgcm <sup>2</sup> | 1              | 3              | 0.03                                                      | 0.16   | 0.61   | 3.25   | 9.21   | 28.98  | 69.61  |
|                                        |                                                    |                   |                | 4              | 0.03                                                      | 0.14   | 0.48   | 2.74   | 7.54   | 23.67  | 54.37  |
|                                        |                                                    |                   |                | 5              | 0.03                                                      | 0.13   | 0.47   | 2.71   | 7.42   | 23.29  | 53.27  |
|                                        |                                                    |                   |                | 7              | 0.03                                                      | 0.13   | 0.45   | 2.62   | 7.42   | 22.48  | 50.97  |
|                                        |                                                    |                   |                | 10             | 0.03                                                      | 0.13   | 0.40   | 2.57   | 7.14   | 22.51  | 50.56  |
|                                        |                                                    |                   | 2              | 15             | 0.03                                                      | 0.14   | 0.45   | 2.95   | 7.03   | 7.42   | 23.29  |
|                                        |                                                    |                   |                | 20             | 0.03                                                      | 0.13   | 0.45   | 2.57   | 2.63   | 7.42   | 23.29  |
|                                        |                                                    |                   |                | 25             | 0.03                                                      | 0.13   | 0.45   | 2.38   | 2.63   | 7.42   | 23.29  |
|                                        |                                                    |                   |                | 30             | 0.03                                                      | 0.13   | 0.45   | 2.31   | 2.63   | 7.42   | 23.29  |
|                                        |                                                    |                   |                | 35             | 0.03                                                      | 0.13   | 0.45   | 2.26   | 2.43   | 7.42   | 23.29  |
|                                        |                                                    |                   |                | 40             | 0.03                                                      | 0.13   | 0.45   | 2.20   | 2.43   | 7.42   | 23.29  |
|                                        |                                                    |                   |                | 50             | 0.03                                                      | 0.13   | 0.40   | 2.14   | 2.39   | 7.03   | 22.51  |
|                                        |                                                    |                   |                | 70             | 0.03                                                      | 0.13   | 0.40   | 2.05   | 2.39   | 7.03   | 22.51  |
|                                        |                                                    |                   |                | 100            | 0.03                                                      | 0.13   | 0.40   | 1.97   | 2.39   | 7.03   | 22.51  |

1. 級數
2. 減速比  $i=n_1/n_{ax}$
3. 取決于電機軸的直徑。
4. 在輸出轉速100rpm時，作用於輸出中心位置之容許徑向力和軸向力。
5. 轉動慣量與減速速比、減速機內部結構、輸入軸徑等傳動系統有關，直角傳動慣量有變化。

1. Stage
2. Ratios  $i=n_1/n_{ax}$
3. Depends on the motor shaft diameter.
4. Allowing radial force and axial force that function in output central place when output speed is 100rpm.
5. The moment of inertia relates to the ratio, frame, input shaft and to standard motor shaft etc.





**單位mm / All dimensions in mm unless specified**

| 型號/Type    |     |    | DE 050  |     | DE 070  |      | DE 090   |     | DE 120    |     | DE155     |       | DE205     |      | DE235     |     |
|------------|-----|----|---------|-----|---------|------|----------|-----|-----------|-----|-----------|-------|-----------|------|-----------|-----|
| 尺寸/Size    |     |    | 1       | 2   | 1       | 2    | 1        | 2   | 1         | 2   | 1         | 2     | 1         | 2    | 1         | 2   |
| 輸出端/Output | D1  |    | 44      |     | 62      |      | 80       |     | 108       |     | 140       |       | 184       |      | 210       |     |
|            | D2  |    | M4×0.7P |     | M5×0.8P |      | M6×1P    |     | M8×1.25P  |     | M10×1.5P  |       | M12×1.75P |      | M16×2P    |     |
|            | D3  | j6 | 13      |     | 16      |      | 22       |     | 32        |     | 40        |       | 55        |      | 75        |     |
|            | D4  | g6 | 35      |     | 52      |      | 68       |     | 90        |     | 120       |       | 160       |      | 180       |     |
|            | D5  |    | 15      |     | 18      |      | 30       |     | 40        |     | 50        |       | 70        |      | 85        |     |
|            | D6  |    | M4×0.7P |     | M5×0.8P |      | M8×1.25P |     | M12×1.75P |     | M16×2P    |       | M20×2.5P  |      | M20×2.5P  |     |
|            | D7  |    | 50      |     | 64      |      | 94       |     | 125       |     | 150       |       | 200       |      | 225       |     |
|            | D8  |    | -       |     | 70      |      | 90       |     | 120       |     | 155       |       | 205       |      | 235       |     |
|            | D9  |    | -       |     | 51      |      | 77       |     | 98        |     | 125       |       | 160       |      | 190       |     |
|            | L1  |    | -       |     | 20.5    |      | 33.5     |     | 38        |     | 50        |       | 52        |      | 63        |     |
|            | L2  |    | 24.5    |     | 37      |      | 46       |     | 70        |     | 97        |       | 100       |      | 126       |     |
|            | L3  |    | 4       |     | 7       |      | 8        |     | 17        |     | 15        |       | 15        |      | 18        |     |
|            | L4  |    | 1       |     | 1.5     |      | 1        |     | 1.5       |     | 3         |       | 3         |      | 3         |     |
|            | L5  |    | 15      |     | 25      |      | 32       |     | 40        |     | 63        |       | 70        |      | 90        |     |
|            | L6  |    | 2       |     | 2       |      | 3        |     | 5         |     | 5         |       | 6         |      | 7         |     |
|            | L7  |    | 4       |     | 6       |      | 12       |     | 16        |     | 20        |       | 22        |      | 28        |     |
|            | L8  |    | 49      | 63  | 63.5    | 95.5 | 81       | 118 | 97        | 142 | 124.5     | 185.5 | 136.5     | 205  | 165       | 240 |
|            | L9  |    | 4.5     |     | 4.8     |      | 7.2      |     | 10        |     | 12        |       | 15        |      | 15        |     |
|            | L10 |    | 12.5    |     | 12.5    |      | 19       |     | 28        |     | 36        |       | 42        |      | 42        |     |
|            | B1  | h9 | 5       |     | 5       |      | 6        |     | 10        |     | 12        |       | 16        |      | 20        |     |
| H1         |     | 15 |         | 18  |         | 24.5 |          | 35  |           | 43  |           | 59    |           | 79.5 |           |     |
| 輸入端/Input  | C1  |    | 46      |     | 70      |      | 90       |     | 145       |     | 200       |       | 200       |      | 235       |     |
|            | C2  |    | M4×0.7P |     | M4×0.7P |      | M5×0.8P  |     | M8×1.25P  |     | M12×1.75P |       | M12×1.75P |      | M12×1.75P |     |
|            | C3  |    | ≤8      |     | ≤14     |      | ≤19      |     | ≤24       |     | ≤35       |       | ≤42       |      | ≤55       |     |
|            | C4  |    | 26.5    |     | 35      |      | 46.5     |     | 67        |     | 81        |       | 114       |      | 117       |     |
|            | C5  |    | 30      |     | 50      |      | 70       |     | 110       |     | 114.3     |       | 114.3     |      | 200       |     |
|            | C6  |    | 4       |     | 3.5     |      | 6        |     | 14        |     | 10        |       | 24        |      | 20        |     |
|            | C7  |    | 42      |     | 60      |      | 80       |     | 130       |     | 180       |       | 180       |      | 220       |     |
|            | C8  |    | 19.5    |     | 46      |      | 30       |     | 45.5      |     | 57.5      |       | 81.5      |      | 87.5      |     |
|            | C9  |    | 92.5    | 107 | 122     | 154  | 156      | 194 | 212       | 257 | 279       | 325   | 318       | 353  | 377       | 442 |

1. 此參數與所配電機型號有關。

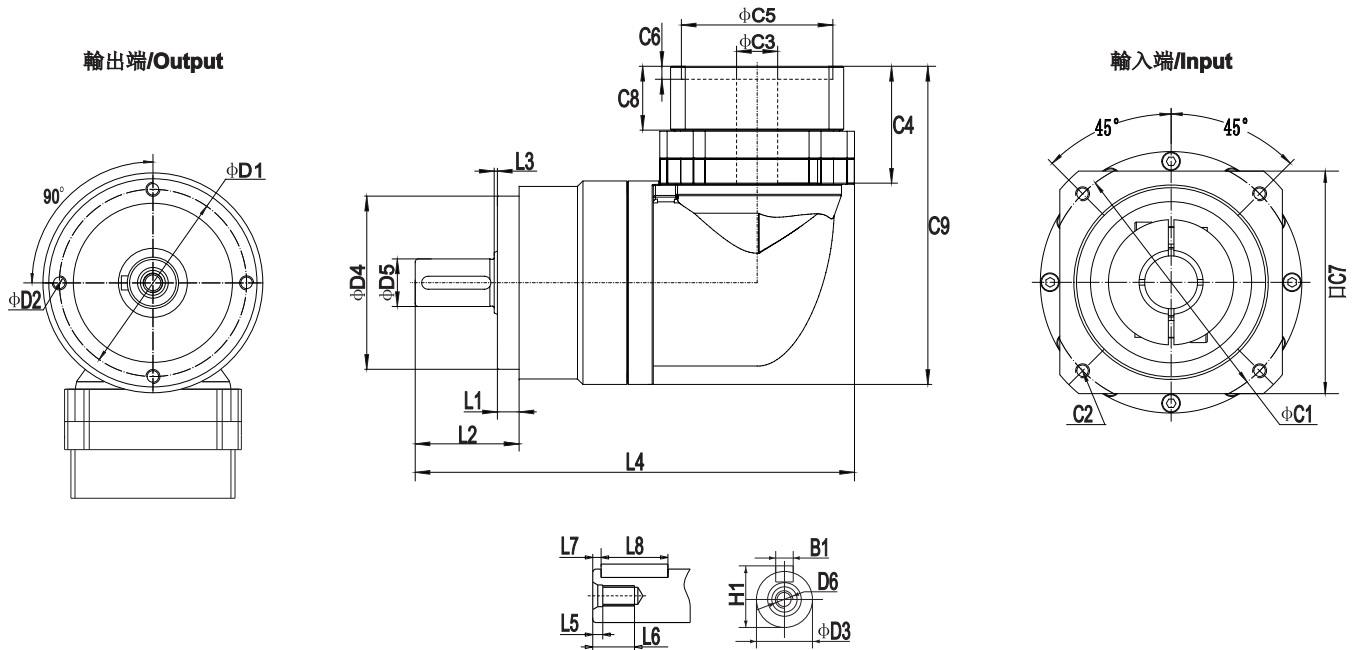
**1. Dimensions refer to the mounted motor-type.**

| 項目描述Description                        |                                                    |                   | Z <sup>1</sup> | i <sup>2</sup> | DER070                                                    | DER090 | DER120 | DER155 | DER205 |
|----------------------------------------|----------------------------------------------------|-------------------|----------------|----------------|-----------------------------------------------------------|--------|--------|--------|--------|
| 額定輸出扭矩<br>T <sub>2N</sub> <sup>3</sup> | Nominal Output Torque T <sub>2N</sub> <sup>3</sup> | Nm                | 1              | 3              | 55                                                        | 130    | 208    | 342    | 588    |
|                                        |                                                    |                   |                | 4              | 50                                                        | 140    | 290    | 540    | 1050   |
|                                        |                                                    |                   |                | 5              | 60                                                        | 160    | 330    | 650    | 1200   |
|                                        |                                                    |                   |                | 7              | 50                                                        | 140    | 300    | 550    | 1100   |
|                                        |                                                    |                   |                | 10             | 40                                                        | 100    | 220    | 450    | 900    |
|                                        |                                                    |                   | 2              | 15             | 55                                                        | 130    | 208    | 342    | 588    |
|                                        |                                                    |                   |                | 20             | 50                                                        | 140    | 290    | 540    | 1050   |
|                                        |                                                    |                   |                | 25             | 60                                                        | 160    | 330    | 650    | 1200   |
|                                        |                                                    |                   |                | 30             | 55                                                        | 130    | 208    | 342    | 588    |
|                                        |                                                    |                   |                | 35             | 50                                                        | 140    | 300    | 550    | 1100   |
|                                        |                                                    |                   |                | 40             | 45                                                        | 120    | 290    | 540    | 1050   |
|                                        |                                                    |                   |                | 50             | 60                                                        | 160    | 330    | 650    | 1200   |
|                                        |                                                    |                   |                | 70             | 50                                                        | 140    | 300    | 550    | 1100   |
|                                        |                                                    |                   |                | 100            | 40                                                        | 100    | 220    | 450    | 900    |
| 最大輸出扭矩                                 | Max. Output torque                                 | Nm                |                |                | 2.5倍于T <sub>2N</sub> / 2.5 times of Nominal Output Torque |        |        |        |        |
| 額定輸入轉速                                 | Nominal Input Speed                                | rpm               |                |                | 5000                                                      | 4000   | 4000   | 3000   | 3000   |
| 最大輸入轉速                                 | Max. Input speed                                   | rpm               |                |                | 10000                                                     | 8000   | 8000   | 6000   | 6000   |
| 回程間隙                                   | Backlash                                           | B2                | arcmin         | 1              | ≤8                                                        | ≤8     | ≤8     | ≤8     | ≤8     |
|                                        |                                                    | B2                |                | 2              | ≤10                                                       | ≤10    | ≤10    | ≤10    | ≤10    |
|                                        |                                                    | B1                | arcmin         | 1              | ≤5                                                        | ≤5     | ≤5     | ≤5     | ≤5     |
|                                        |                                                    | B1                |                | 2              | ≤8                                                        | ≤8     | ≤8     | ≤8     | ≤8     |
| 抗扭鋼性                                   | Torsional Stiffness                                | Nm/arcmin         |                |                | 7                                                         | 14     | 25     | 50     | 145    |
| 容許徑向力 <sup>4</sup>                     | Max. Radial Force <sup>4</sup>                     | N                 |                |                | 1530                                                      | 3250   | 6700   | 9400   | 14500  |
| 容許軸向力 <sup>4</sup>                     | Max. Axial Force <sup>4</sup>                      | N                 |                |                | 630                                                       | 1300   | 3000   | 4000   | 6200   |
| 使用壽命                                   | Service Life                                       | Hr                |                |                | 20000(連續運轉降低使用壽命50%)                                      |        |        |        |        |
| 效率                                     | Efficiency                                         | %                 |                |                | 1 stage ≥ 94%, 2 stage ≥ 92%                              |        |        |        |        |
| 工作溫度                                   | Operating Temp                                     | °C                |                |                | -10°C ~ +90°C                                             |        |        |        |        |
| 防護等級                                   | Degree of Protection                               |                   |                |                | IP 65                                                     |        |        |        |        |
| 安裝方式                                   | Mounting Postion                                   |                   |                |                | 任意/Any Direction                                          |        |        |        |        |
| 潤滑                                     | Lubrication                                        |                   |                |                | 合成潤滑油脂/Synthetic Lubricating Grease                       |        |        |        |        |
| 噪音                                     | Noise                                              | dB(A)             |                |                | ≤63                                                       | ≤65    | ≤68    | ≤70    | ≤72    |
| 轉動慣量 <sup>5</sup>                      | Input Shaft Moment of Inertia <sup>5</sup>         | Kgcm <sup>2</sup> | 1              | 3              | 0.16                                                      | 0.61   | 3.25   | 9.21   | 28.98  |
|                                        |                                                    |                   |                | 4              | 0.14                                                      | 0.48   | 2.74   | 7.54   | 23.67  |
|                                        |                                                    |                   |                | 5              | 0.13                                                      | 0.47   | 2.71   | 7.42   | 23.29  |
|                                        |                                                    |                   |                | 7              | 0.13                                                      | 0.45   | 2.62   | 7.42   | 22.48  |
|                                        |                                                    |                   |                | 10             | 0.13                                                      | 0.40   | 2.57   | 7.14   | 22.51  |
|                                        |                                                    |                   | 2              | 15             | 0.14                                                      | 0.45   | 2.95   | 7.03   | 7.42   |
|                                        |                                                    |                   |                | 20             | 0.13                                                      | 0.45   | 2.57   | 2.63   | 7.42   |
|                                        |                                                    |                   |                | 25             | 0.13                                                      | 0.45   | 2.38   | 2.63   | 7.42   |
|                                        |                                                    |                   |                | 30             | 0.13                                                      | 0.45   | 2.31   | 2.63   | 7.42   |
|                                        |                                                    |                   |                | 35             | 0.13                                                      | 0.45   | 2.26   | 2.43   | 7.42   |
|                                        |                                                    |                   |                | 40             | 0.13                                                      | 0.45   | 2.20   | 2.43   | 7.42   |
|                                        |                                                    |                   |                | 50             | 0.13                                                      | 0.40   | 2.14   | 2.39   | 7.03   |
|                                        |                                                    |                   |                | 70             | 0.13                                                      | 0.40   | 2.05   | 2.39   | 7.03   |
|                                        |                                                    |                   |                | 100            | 0.13                                                      | 0.40   | 1.97   | 2.39   | 7.03   |

1. 級數
2. 減速比  $i = n_1/n_{out}$
3. 取決于電機軸的直徑。
4. 在輸出轉速100rpm時，作用于輸出中心位置之容許徑向力和軸向力。
5. 轉動慣量與減速速比、減速機內部結構、輸入軸徑等傳動系統有關，直角傳動慣量有變化。

1. Stage
2. Ratios  $i = n_1/n_{out}$
3. Depends on the motor shaft diameter.
4. Allowing radial force and axial force that function in output central place when output-speed is 100rpm.
5. The moment of inertia relates to the ratio, frame, input shaft and to standard motor shaft etc.





單位mm / All dimensions in mm unless specified

| 型號/Type    |    | DER070  |         | DER090   |           | DER120   |          | DER155    |     | DER205    |     |
|------------|----|---------|---------|----------|-----------|----------|----------|-----------|-----|-----------|-----|
| 尺寸/Size    |    | 1       | 2       | 1        | 2         | 1        | 2        | 1         | 2   | 1         | 2   |
| 輸出端/Output | D1 | 62      |         | 80       |           | 108      |          | 140       |     | 184       |     |
|            | D2 | M5×0.8P |         | M6×1P    |           | M8×1.25P |          | M10×1.5P  |     | M12×1.75P |     |
|            | D3 | j6      | 16      | 22       | 32        | 40       | 55       |           |     |           |     |
|            | D4 | g6      | 52      | 68       | 90        | 120      | 160      |           |     |           |     |
|            | D5 |         | 17.5    | 29.5     | 39.5      | 49.5     | 95       |           |     |           |     |
|            | D6 |         | M5×0.8P | M8×1.25P | M12×1.75P | M16×2P   | M20×2.5P |           |     |           |     |
|            | L1 | 6.5     |         | 8        |           | 17       |          | 15        |     | 15        |     |
|            | L2 | 36      |         | 46       |           | 70       |          | 97        |     | 100       |     |
|            | L3 | 28.5    |         | 36.5     |           | 51       |          | 79        |     | 82        |     |
|            | L4 | 150     | 182     | 203      | 240       | 266      | 290      | 359       | 431 | 380       | 423 |
|            | L5 | 4       |         | 6        |           | 10       |          | 16        |     | 15        |     |
|            | L6 | 13      |         | 20       |           | 28       |          | 36        |     | 42        |     |
|            | L7 | 3       |         | 3        |           | 5        |          | 5         |     | 6         |     |
|            | L8 | 25.3    |         | 32       |           | 40       |          | 63        |     | 70        |     |
|            | B1 | h9      | 5       | 6        | 10        | 12       | 16       |           |     |           |     |
|            | H1 | 18      |         | 24.5     |           | 35       |          | 43        |     | 59        |     |
| 輸入端/Input  | C1 | 70      |         | 90       |           | 145      |          | 200       |     | 215       |     |
|            | C2 | M4×0.7P |         | M5×0.8P  |           | M8×1.25P |          | M12×1.75P |     | M12×1.75P |     |
|            | C3 | ≤14     |         | ≤19      |           | ≤24      |          | ≤35       |     | ≤42       |     |
|            | C4 | 35      |         | 54       |           | 61       |          | 81        |     | 114       |     |
|            | C5 | 50      |         | 70       |           | 110      |          | 114.3     |     | 114.3     |     |
|            | C6 | 3.5     |         | 6        |           | 14       |          | 19        |     | 20        |     |
|            | C7 | 60      |         | 80       |           | 130      |          | 180       |     | 190       |     |
|            | C8 | 24.5    |         | 29.5     |           | 45       |          | 57        |     | 63        |     |
|            | C9 | 105     |         | 147      |           | 194.5    |          | 253       |     | 316       |     |

1. 此參數與所配電機型號有關。

1. Dimensions refer to the mounted motor-type.