

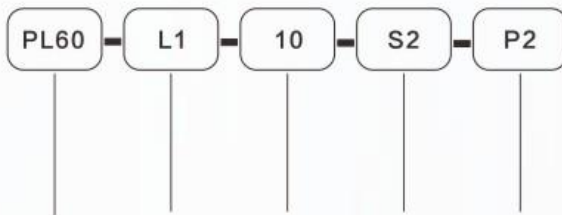
# PL

系列 series



REDUCER MODEL, SELECTION INSTRUCTIONS  
**MODEL REPRESENTATION**

● 减速机型号、选型说明型号表示



| 产品系列规格         | 级数     | 减数比   | 输出轴方式         | 精度等级      |
|----------------|--------|-------|---------------|-----------|
| Product Series | Series | Ratio | output method | Precision |
| 60             | L1:一级  | 3     | S2:单键轴        | P2:标准     |
| 80             |        | 4     | S1:光轴         | P1:精密     |
| 90             | L2:二级  | 5     | K:空心单键轴       |           |
| 120            |        | 7     |               |           |
|                |        | 10    |               |           |
|                |        | 15    |               |           |
|                |        | 20    |               |           |
|                |        | 25    |               |           |
|                |        | 30    |               |           |
|                |        | 35    |               |           |
|                |        | 40    |               |           |
|                |        | ....  |               |           |
|                |        | 100   |               |           |

**SPEED REDUCER  
 SELECTION INSTRUCTIONS**

● 减速机选型须知

- 机种、型号、扭矩
- 减速比或者出力轴转速
- 工况及连接方式
- 数量及安装的机械名称
- 入力方式和入力转速
- 电机厂牌型号或者法兰及电机轴尺寸
  
- model, model, polycarbonate
- reduction ratio or output shaft axial
- working conditions and connection methods
- Quantity and installed machine name
- Incoming mode and input transformation
- Motor brand model or flange and motor shaft size

技术参数  
Technical parameter

| 规格<br>Specifications            |              |   | PL60                        | PL80 | PL90                               | PL120 |      |  |
|---------------------------------|--------------|---|-----------------------------|------|------------------------------------|-------|------|--|
|                                 | 级数<br>Series | 比数<br>Gear ratio  |                             |      |                                    |       |      |  |
| 额定扭矩<br>T <sub>N</sub><br>(Nm)  | L1           | 3   | 22                          | 55   | 96                                 | 155   |      |  |
|                                 |              | 4   | 34                          | 88   | 122                                | 216   |      |  |
|                                 |              | 5   | 35                          | 92   | 122                                | 223   |      |  |
|                                 |              | 7   | 27                          | 56   | 95                                 | 164   |      |  |
|                                 |              | 10  | 16                          | 31   | 56                                 | 90    |      |  |
|                                 | L2           | 12  | 28                          | 68   | 96                                 | 206   |      |  |
|                                 |              | 15  | 28                          | 72   | 96                                 | 155   |      |  |
|                                 |              | 16  | 35                          | 93   | 122                                | 230   |      |  |
|                                 |              | 20  | 35                          | 93   | 122                                | 230   |      |  |
|                                 |              | 25  | 37                          | 95   | 122                                | 237   |      |  |
|                                 |              | 28  | 35                          | 88   | 122                                | 230   |      |  |
|                                 |              | 30  | 25                          | 55   | 96                                 | 164   |      |  |
|                                 |              | 35  | 35                          | 98   | 122                                | 237   |      |  |
|                                 |              | 40  | 35                          | 93   | 122                                | 230   |      |  |
|                                 |              | 50  | 37                          | 98   | 122                                | 237   |      |  |
|                                 |              | 70  | 30                          | 60   | 95                                 | 174   |      |  |
|                                 |              | 100   | 16                          | 31   | 56                                 | 90    |      |  |
|                                 |              | 最大输出扭矩T <sub>2N</sub> (Nm)<br>The maximum output torque |                             |      | 2倍额定扭矩输出<br>2x rated torque output |       |      |  |
|                                 |              | 满载效率(%)<br>Full-load efficiency                         |                             |      | L1≥96% L2≥92%                      |       |      |  |
|                                 |              | 平均使用寿命(h)<br>Average service life                       |                             |      | 20000                              |       |      |  |
| 工作温度(°C)<br>Working temperature |              |   | -20°C~+80°C                 |      |                                    |       |      |  |
| 防护等级<br>Level of protection     |              |   | IP65                        |      |                                    |       |      |  |
| 安装方向<br>Installation direction  |              |   | 任意方向<br>Arbitrary direction |      |                                    |       |      |  |
| 重量(Kg)<br>Weight (Kg)           |              |   | L1                          | 0.9  | 2.2                                | 2.75  | 6.5  |  |
|                                 |              |   | L2                          | 1.2  | 2.9                                | 3.8   | 8.85 |  |

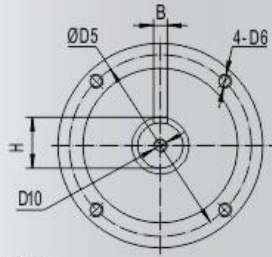
ZF  
PL  
PNF  
PWE  
ZPF  
ZPL  
PFK  
ZPFK  
ZPNF  
ZPWE  
PFE ZPF  
42-PFS  
ZPFS150  
SHD  
Z260  
Z1Z90  
ZK90

## 技术参数 Technical parameter

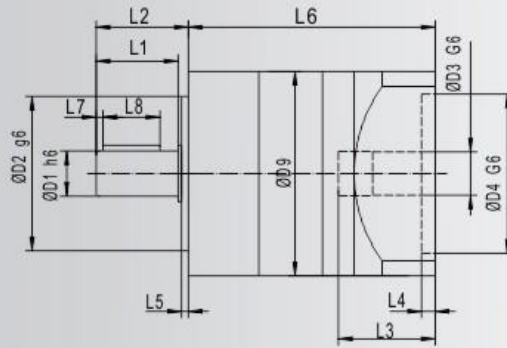
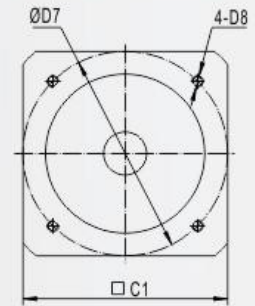
| 规格<br>Specifications                               |                           |                    | PL60               | PL80               | PL90 | PL120 |      |      |
|--|---------------------------|--------------------|--------------------|--------------------|------|-------|------|------|
| 最大输入转速 n1N<br>Maximum input speed                  |                           | rpm                | 8000               | 6000               | 6000 | 4800  |      |      |
| 额定输入转速 n1B<br>Rated input speed                    |                           | rpm                | 4000               | 3500               | 3500 | 3000  |      |      |
| 最大容许径向力 F2rB<br>The maximum allowable radial force |                           | N                  | 320                | 650                | 680  | 1730  |      |      |
| 最大容许轴向力 F2aB<br>The maximum allowable axial force  |                           | N                  | 260                | 610                | 620  | 1270  |      |      |
| 抗扭刚性<br>Torsional rigidity                         |                           | Nm/arcmin          | 2                  | 6.1                | 6.2  | 11.1  |      |      |
| 噪音值<br>Noise value                                 |                           | dB                 | ≤58                | ≤60                | ≤60  | ≤65   |      |      |
| 回程间隙<br>Return stroke clearance                    | P1                        | L1                 | arcmin             | ≤8                 | ≤8   | ≤8    | ≤8   |      |
|  |                           | L2                 | arcmin             | ≤12                | ≤12  | ≤12   | ≤12  |      |
|  | P2                        | L1                 | arcmin             | ≤16                | ≤16  | ≤16   | ≤16  |      |
|  |                           | L2                 | arcmin             | ≤20                | ≤20  | ≤20   | ≤20  |      |
|  | 转动惯量<br>Moment of inertia | L1                 | 3                  | Kg.cm <sup>2</sup> | 0.28 | 0.59  | 1.55 | 7.3  |
|  |                           |                    | 4                  | Kg.cm <sup>2</sup> | 0.27 | 0.54  | 1.5  | 7    |
|  |                           |                    | 5                  | Kg.cm <sup>2</sup> | 0.27 | 0.53  | 1.49 | 6.97 |
|  |                           |                    | 7                  | Kg.cm <sup>2</sup> | 0.25 | 0.47  | 1.24 | 6.26 |
|  |                           |                    | 10                 | Kg.cm <sup>2</sup> | 0.25 | 0.47  | 1.24 | 6.24 |
|  |                           | L2                 | 12                 | Kg.cm <sup>2</sup> | 0.27 | 0.56  | 1.33 | 6.92 |
| 15   |                           |                    | Kg.cm <sup>2</sup> | 0.26               | 0.54 | 1.31  | 6.9  |      |
| 16   |                           |                    | Kg.cm <sup>2</sup> | 0.27               | 0.52 | 1.3   | 6.74 |      |
| 20   |                           |                    | Kg.cm <sup>2</sup> | 0.27               | 0.51 | 1.28  | 6.67 |      |
| 25   |                           |                    | Kg.cm <sup>2</sup> | 0.27               | 0.51 | 1.28  | 6.67 |      |
| L2   | 28                        | Kg.cm <sup>2</sup> | 0.27               | 0.5                | 1.27 | 6.66  |      |      |
|  | 30                        | Kg.cm <sup>2</sup> | 0.25               | 0.5                | 1.27 | 6.66  |      |      |
|  | 35                        | Kg.cm <sup>2</sup> | 0.25               | 0.5                | 1.27 | 6.65  |      |      |
|  | 40                        | Kg.cm <sup>2</sup> | 0.27               | 0.5                | 1.27 | 6.65  |      |      |
|  | 50                        | Kg.cm <sup>2</sup> | 0.22               | 0.43               | 1.1  | 6.3   |      |      |
| L2   | 70                        | Kg.cm <sup>2</sup> | 0.22               | 0.43               | 1.1  | 6.3   |      |      |
|  | 100                       | Kg.cm <sup>2</sup> | 0.22               | 0.43               | 1.1  | 6.3   |      |      |

# PL

输出端  
Output terminal



输入端  
Input terminal



PL外形图数据  
PL outline drawing data

| 级数       | 规格    | D1 | D2 | D3 | D4   | D5  | D6  | D7    | D8 | D9  | D10 | L1   | L2   | L3   | L4 | L5 | L6    | L7 | L8 | C1  | B | H    |
|----------|-------|----|----|----|------|-----|-----|-------|----|-----|-----|------|------|------|----|----|-------|----|----|-----|---|------|
| 单级<br>L1 | PL60  | 14 | 40 | 14 | 50   | 52  | M5  | 70    | M4 | 60  | M5  | 31   | 35   | 31.5 | 5  | 3  | 80    | 3  | 20 | 60  | 5 | 16   |
|          |       | 14 | 40 | 11 | 50   | 52  | M5  | 70    | M4 | 60  | M5  | 31   | 35   | 31.5 | 5  | 3  | 80    | 3  | 20 | 60  | 5 | 16   |
|          |       | 14 | 40 | 8  | 38.1 | 52  | M5  | 66.7  | M4 | 60  | M5  | 31   | 35   | 31.5 | 5  | 3  | 80    | 3  | 20 | 60  | 5 | 16   |
|          |       | 14 | 40 | 8  | 36   | 52  | M5  | 70.7  | M4 | 60  | M5  | 31   | 35   | 31.5 | 5  | 3  | 80    | 3  | 20 | 60  | 5 | 16   |
|          | PL80  | 20 | 60 | 19 | 70   | 70  | M6  | 90    | M5 | 80  | M6  | 36   | 40.5 | 41.5 | 6  | 3  | 108.5 | 3  | 25 | 80  | 6 | 22.5 |
|          |       | 20 | 60 | 14 | 73   | 70  | M6  | 98.43 | M5 | 80  | M6  | 36   | 40.5 | 41.5 | 6  | 3  | 108.5 | 3  | 25 | 80  | 6 | 22.5 |
|          | PL90  | 20 | 68 | 19 | 70   | 80  | M6  | 90    | M5 | 90  | M6  | 36   | 40.5 | 41.5 | 5  | 3  | 109.5 | 3  | 25 | 90  | 6 | 22.5 |
|          |       | 20 | 68 | 16 | 80   | 80  | M6  | 100   | M5 | 90  | M6  | 36   | 40.5 | 41.5 | 5  | 3  | 109.5 | 3  | 25 | 90  | 6 | 22.5 |
|          |       | 20 | 68 | 14 | 73   | 80  | M6  | 98.43 | M5 | 90  | M6  | 36   | 40.5 | 41.5 | 5  | 3  | 109.5 | 3  | 25 | 90  | 6 | 22.5 |
|          |       | 20 | 68 | 14 | 60   | 80  | M6  | 98.43 | M5 | 90  | M6  | 36   | 40.5 | 41.5 | 5  | 3  | 109.5 | 3  | 25 | 90  | 6 | 22.5 |
|          | PL120 | 25 | 80 | 22 | 110  | 100 | M10 | 145   | M8 | 120 | M10 | 48.5 | 54   | 59   | 8  | 4  | 141   | 5  | 40 | 120 | 8 | 28   |
|          |       | 25 | 80 | 24 | 110  | 100 | M10 | 145   | M8 | 120 | M10 | 48.5 | 54   | 59   | 8  | 4  | 141   | 5  | 40 | 120 | 8 | 28   |
|          |       | 25 | 80 | 19 | 95   | 100 | M10 | 115   | M8 | 120 | M10 | 48.5 | 54   | 59   | 8  | 4  | 141   | 5  | 40 | 120 | 8 | 28   |
|          |       | 25 | 80 | 19 | 95   | 100 | M10 | 130   | M8 | 120 | M10 | 48.5 | 54   | 59   | 8  | 4  | 141   | 5  | 40 | 120 | 8 | 28   |
|          |       | 25 | 80 | 19 | 85   | 100 | M10 | 132   | M8 | 120 | M10 | 48.5 | 54   | 59   | 8  | 4  | 141   | 5  | 40 | 120 | 8 | 28   |
| 双级<br>L2 | PL60  | 14 | 40 | 14 | 50   | 52  | M5  | 70    | M4 | 60  | M5  | 31   | 35   | 31.5 | 5  | 3  | 96    | 3  | 20 | 60  | 5 | 16   |
|          |       | 14 | 40 | 11 | 50   | 52  | M5  | 70    | M4 | 60  | M5  | 31   | 35   | 31.5 | 5  | 3  | 96    | 3  | 20 | 60  | 5 | 16   |
|          |       | 14 | 40 | 8  | 38.1 | 52  | M5  | 66.7  | M4 | 60  | M5  | 31   | 35   | 31.5 | 5  | 3  | 96    | 3  | 20 | 60  | 5 | 16   |
|          |       | 14 | 40 | 8  | 36   | 52  | M5  | 70.7  | M4 | 60  | M5  | 31   | 35   | 31.5 | 5  | 3  | 96    | 3  | 20 | 60  | 5 | 16   |
|          | PL80  | 20 | 60 | 19 | 70   | 70  | M6  | 90    | M5 | 80  | M6  | 36   | 40.5 | 41.5 | 6  | 3  | 132.5 | 3  | 25 | 80  | 6 | 22.5 |
|          |       | 20 | 60 | 14 | 73   | 70  | M6  | 98.43 | M5 | 80  | M6  | 36   | 40.5 | 41.5 | 6  | 3  | 132.5 | 3  | 25 | 80  | 6 | 22.5 |
|          | PL90  | 20 | 68 | 19 | 70   | 80  | M6  | 90    | M5 | 90  | M6  | 36   | 40.5 | 41.5 | 5  | 3  | 133.5 | 3  | 25 | 90  | 6 | 22.5 |
|          |       | 20 | 68 | 16 | 80   | 80  | M6  | 100   | M5 | 90  | M6  | 36   | 40.5 | 41.5 | 5  | 3  | 133.5 | 3  | 25 | 90  | 6 | 22.5 |
|          |       | 20 | 68 | 14 | 73   | 80  | M6  | 98.43 | M5 | 90  | M6  | 36   | 40.5 | 41.5 | 5  | 3  | 133.5 | 3  | 25 | 90  | 6 | 22.5 |
|          |       | 20 | 68 | 14 | 60   | 80  | M6  | 98.43 | M5 | 90  | M6  | 36   | 40.5 | 41.5 | 5  | 3  | 133.5 | 3  | 25 | 90  | 6 | 22.5 |
|          | PL120 | 25 | 80 | 22 | 110  | 100 | M10 | 145   | M8 | 120 | M10 | 48.5 | 54   | 59   | 8  | 4  | 172   | 5  | 40 | 120 | 8 | 28   |
|          |       | 25 | 80 | 24 | 110  | 100 | M10 | 145   | M8 | 120 | M10 | 48.5 | 54   | 59   | 8  | 4  | 172   | 5  | 40 | 120 | 8 | 28   |
|          |       | 25 | 80 | 19 | 95   | 100 | M10 | 115   | M8 | 120 | M10 | 48.5 | 54   | 59   | 8  | 4  | 172   | 5  | 40 | 120 | 8 | 28   |
|          |       | 25 | 80 | 19 | 95   | 100 | M10 | 130   | M8 | 120 | M10 | 48.5 | 54   | 59   | 8  | 4  | 172   | 5  | 40 | 120 | 8 | 28   |
|          |       | 25 | 80 | 19 | 85   | 100 | M10 | 132   | M8 | 120 | M10 | 48.5 | 54   | 59   | 8  | 4  | 172   | 5  | 40 | 120 | 8 | 28   |

- ZF
- PL
- PNF
- PWE
- ZPF
- ZPL
- PFK
- ZPFK
- ZPNF
- ZPWE
- PFK-ZPF
- ZPF-S150
- SHD
- Z260
- ZT290
- ZK90