

# APPLICATION 产品应用场景

助力外骨骼  
Powered Exoskeleton

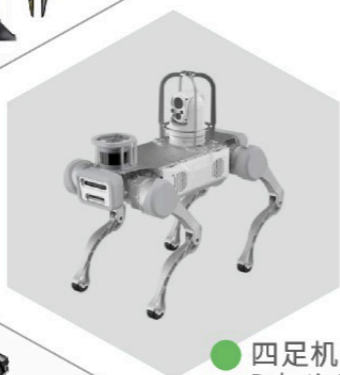


机械手  
Robotic Arm

人形机器人  
Humanoid Robot



良质关节  
LIANGZHI



四足机器狗  
Robotic Dog



穿戴外骨骼  
Wearable Exoskeleton



轮式机器人  
Wheeled Robot

良质  
All for future



专业驱动集成解决方案提供商  
Professional Supplier of Integrated Drive Solutions

良质致力于成为全球机器人  
核心关节驱动制造商

Liangzhi is committed to becoming a global robot  
core joint drive manufacturer

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## 行星关节模组 / INTEGRATED PLANETARY JOINT MODULE

| 型号Model                                | LZ4610N (非中空)<br>Non-hollow | LZ4605N (非中空)<br>Non-hollow | LZ5710N (非中空)<br>Non-hollow | LZ5740N (非中空)<br>Non-hollow | LZ5736N (非中空)<br>Non-hollow | LZ807.75N (非中空)<br>Non-hollow | LZ8025CN (非中空)<br>Non-hollow | LZ10028CH (中空)<br>Hollow-shaft | LZ12028CH (中空)<br>Hollow-shaft |
|--|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-------------------------------|------------------------------|--------------------------------|--------------------------------|
| 减速器类型Reducer Type                      | 行星Planetary                 | 行星Planetary                 | 行星Planetary                 | 行星Planetary                 | 行星Planetary                 | 行星Planetary                   | 行星Planetary                  | 行星Planetary                    | 行星Planetary                    |
| 驱控方式Drive&Control Method               | FOC                         | FOC                         | FOC                         | FOC                         | FOC                         | FOC                           | FOC                          | FOC                            | FOC                            |
| 尺寸Dimensions 直径×高度(mm)                 | Ø46×38                      | Ø46×38                      | Ø57×46                      | Ø57×60                      | Ø57×70                      | Ø80×47                        | Ø80×60.5                     | Ø100×68                        | Ø120×80                        |
| 减速比Gear Ratio                          | 10                          | 5                           | 10                          | 40                          | 36                          | 7.75                          | 25                           | 28                             | 28                             |
| 额定扭矩Rated Torque(N·m)                  | 0.85Nm                      | 0.4Nm                       | 3.4Nm                       | 12Nm                        | 29Nm                        | 7.75Nm                        | 27Nm                         | 67.5Nm                         | 126Nm                          |
| 峰值扭矩peak torque(N·m)                   | 2.55Nm                      | 1.2Nm                       | 10.2Nm                      | 36Nm                        | 80Nm                        | 23.2Nm                        | 81Nm                         | 200Nm                          | 378Nm                          |
| 磁编码器Magnetic Encoder                   | 磁编/双编Dual Encoder           | 磁编/双编Dual Encoder           | 磁编/双编Dual Encoder           | 磁编/双编Dual Encoder           | 磁编/双编Dual Encoder           | 磁编/双编Dual Encoder             | 磁编/双编Dual Encoder            | 磁编/双编Dual Encoder              | 磁编/双编Dual Encoder              |
| 额定功率rated power (W)                    | 83                          | 30                          | 94                          | 94                          | 300                         | 400                           | 380                          | 733                            | 1570                           |
| 额定电压Rated Voltage (V)                  | DC48V                       | DC48V                       | DC48V                       | DC48V                       | DC48V                       | DC48V                         | DC48V                        | DC48V                          | DC48V                          |
| 通讯方式Communication Mode                 | CAN/CANFD                   | CAN/CANFD                   | CAN/CANFD                   | CAN/CANFD                   | CAN/CANFD                   | CAN/CANFD                     | CAN/CANFD                    | CANFD/Ether CAT                | CANFD/Ether CAT                |
| 使用温度范围 Operating Temperature Range(°C) | -20~60°C                    | -20~60°C                    | -20~60°C                    | -20~60°C                    | -20~60°C                    | -20~70°C                      | -20~70°C                     | -20~80°C                       | -20~80°C                       |
| 绝缘等级Insulation Class                   | Class B                     | Class B                     | Class B                     | Class B                     | Class B                     | Class B                       | Class B                      | Class B                        | Class B                        |
| 空载转速No-load Speed (rpm)                | 110                         | 220                         | 210                         | 112                         | 130                         | 645                           | 156                          | 143                            | 140                            |
| 额定转速Rated Speed (rpm)                  | 80                          | 160                         | 140                         | 80                          | 100                         | 516                           | 120                          | 110                            | 107                            |
| 额定电流 Rated Current(Apk)                | 1.3                         | 4.5                         | 3                           | 6                           | 8                           | 10.4                          | 10.7                         | 22                             | 41.6                           |
| 峰值电流Peak Current (Apk)                 | 3.8                         | 13.5                        | 9                           | 9                           | 16                          | 20.8                          | 30                           | 66                             | 83.2                           |
| 背隙 Backlash(arcmin)                    | ≤7arcmin                    | ≤7arcmin                    | ≤7arcmin                    | ≤10arcmin                   | ≤10arcmin                   | ≤10arcmin                     | ≤10arcmin                    | ≤10arcmin                      | ≤10arcmin                      |
| 电机反电势 / 反电动势常数Back-EMF Constant        | 1.54V/krpm                  | 1.54V/krpm                  | 7.1V/krpm                   | 7.1V/krpm                   | 7.52V/krpm                  | 0.1528 Vs/Rad                 | 7.45Vrms/krpm                | 9Vrms/krpm                     | 8V/krpm                        |
| 转矩常数Torque Constant                    | 0.025Nm/A                   | 0.025Nm/A                   | 0.1Nm/A                     | 0.1Nm/A                     | 0.124Nm/A                   | 0.09143Nm/A                   | 0.15Nm/A                     | 0.15Nm/A                       | 0.12Nm/A                       |
| 极数Stage Count                          | 10                          | 10                          | 28                          | 28                          | 28                          | 28                            | 28                           | 42                             | 42                             |
| 线圈接法Coil Connection                    | 星型 Star connection          | 星型 Star connection          | 星型 Star connection          | 星型 Star connection          | 星型 Star connection          | 星型 Star connection            | 星型 Star connection           | 三角形 Delta Connection           | 三角形 Delta Connection           |
| 轴承类型bearing type                       | 深沟球轴承 Ball Bearing          |                             |                             |                             |                             |                               | 交叉滚子轴承 Cross roller bearings |                                |                                |
| 工作噪音Working Noise(dB)                  | ≤55                         | ≤55                         | ≤55                         | ≤58                         | ≤60                         | ≤65                           | ≤65                          | ≤65                            | ≤70                            |
| 重量Weight (g)                           | 150                         | 150                         | 300                         | 360                         | 450                         | 430                           | 850                          | 1550                           | 2270                           |
| 相数Phases Number                        | 3                           | 3                           | 3                           | 3                           | 3                           | 3                             | 3                            | 3                              | 3                              |