

# TSL-CRA-RI70-80

## Ø80 mm Robot Joint Module | Harmonic Gearbox

Integrated Ø80 robot joint module with 51:1 / 81:1 / 101:1 / 121:1 harmonic reduction.



|                             |                       |                         |                |
|-----------------------------|-----------------------|-------------------------|----------------|
| Reduction Ratio             | Rated Torque          | Peak Torque             | Supply Voltage |
| 51:1 / 81:1 / 101:1 / 121:1 | 32 / 42 / 50 / 50 N·m | 69 / 91 / 102 / 108 N·m | 24-48 V        |

## 1. Electrical, Mechanical and Control Parameters

| Ratio                                                           | Unit                  | 51               | 81   | 101  | 121  |
|-----------------------------------------------------------------|-----------------------|------------------|------|------|------|
| Start-Stop Peak Torque                                          | N·m                   | 69               | 91   | 102  | 108  |
| Average Load Torque Capacity Maximum (Robot Scenario)           | N·m                   | 42               | 58   | 61   | 61   |
| Rated Torque at 2000rpm/(Reduction Ratio) (Industrial Scenario) | N·m                   | 32               | 42   | 50   | 50   |
| Output Shaft Peak Speed                                         | rpm                   | 77               | 48   | 40   | 30   |
| Rated Speed (with 1/2 Rated Torque)                             | rpm                   | 61               | 38   | 30   | 25   |
| Backlash                                                        | arcsec                | 20               | 20   | 10   | 10   |
| Rated Power                                                     | W                     | 340              |      |      |      |
| Supply Voltage                                                  | V                     | 24 -48           |      |      |      |
| Encoder Resolution                                              | bit                   | 16               |      |      |      |
| Communication Bus                                               | -                     | CAN              |      |      |      |
| Brake Torque (No Brake / With Brake)                            | N·m                   | 0 /1             |      |      |      |
| Stiffness                                                       | 10 <sup>4</sup> N/rad | 1.24             | 1.52 | 1.52 | 1.52 |
| Allowable Radial Load                                           | kN                    | 10.42            |      |      |      |
| Allowable Axial Load                                            | kN                    | 23.68            |      |      |      |
| Allowable Bending Moment                                        | N·m                   | 320              |      |      |      |
| Length (No Brake / With Brake)                                  | mm                    | 73±0.5 /91.5±0.5 |      |      |      |
| Through Hole                                                    | mm                    | 18               |      |      |      |
| Weight (No Brake / With Brake)                                  | kg                    | 0.9 /1.11        |      |      |      |
| Inertia (No Brake / With Brake)                                 | g·cm <sup>2</sup>     | 596.4 /746.7     |      |      |      |

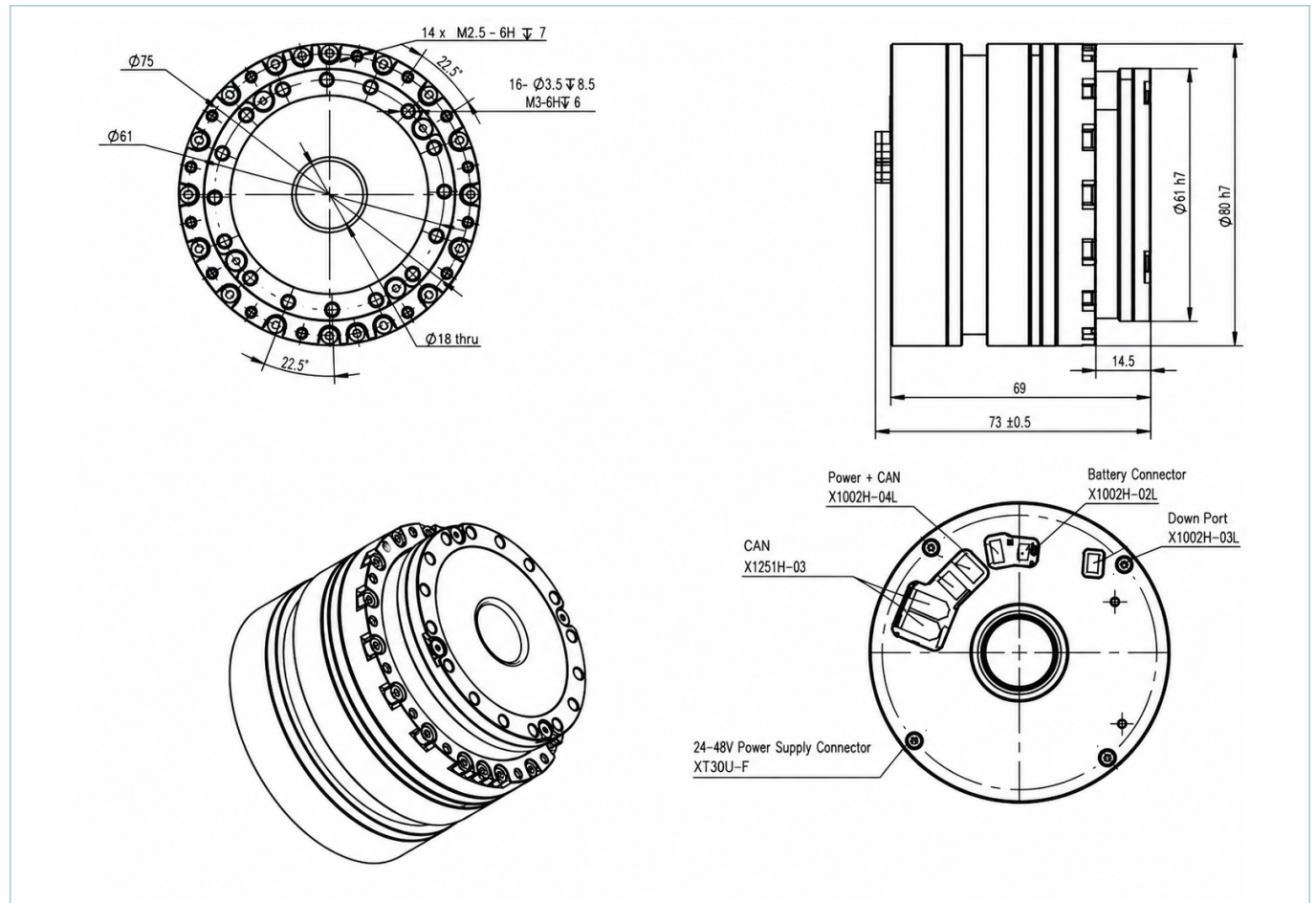
Parameters are for reference only. For final installation dimensions, refer to the drawings on pages 2-3.

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## 2. Dimension Drawing - 73 mm Version - Without Brake

All dimensions are in millimeters unless otherwise specified.



|                          |                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------|
| Configuration            | 73 mm version (without brake)                                                     |
| Overall Length           | 73 ± 0.5 mm                                                                       |
| Referenced Length        | 69 mm                                                                             |
| Outer Diameter           | Ø80 h7                                                                            |
| Front Interface          | Ø67 h7; Ø75 and Ø61 reference diameters                                           |
| Through Hole             | Ø18 through                                                                       |
| Brake Torque             | 0 N·m (no brake)                                                                  |
| Communication Interfaces | CAN, Power + CAN, 24-48 V power supply connector, battery connector, down port    |
| Mounting Features        | 14 × M2.5-6H depth 7; 16 × Ø3.5 depth 8.5 / M3-6H depth 6; hole patterns as shown |

Drawing: TSL-CRA-RI70-80 - 73 mm Without Brake Version

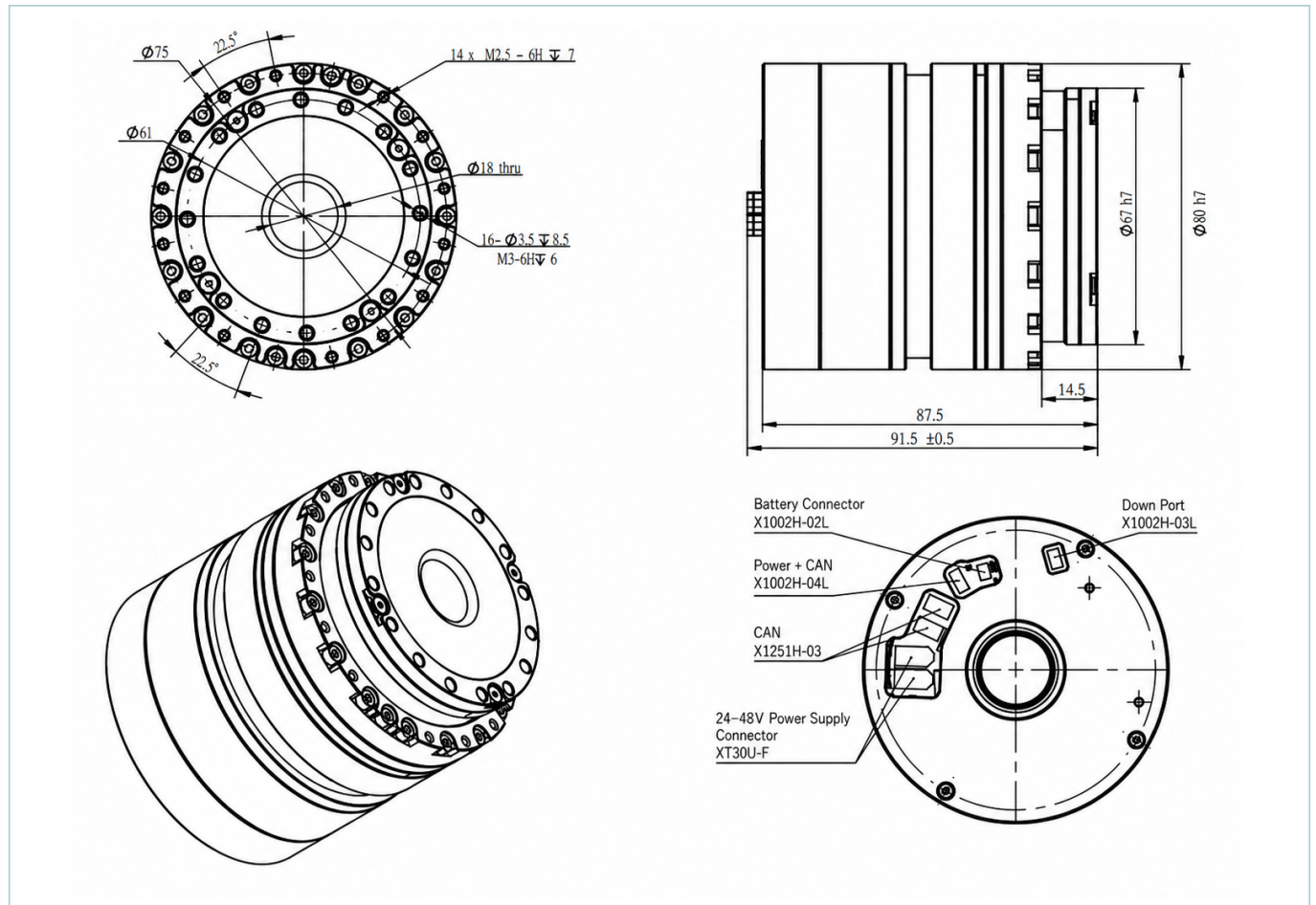
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## 3. Dimension Drawing - 91.5 mm Version - With Brake

All dimensions are in millimeters unless otherwise specified.



|                          |                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------|
| Configuration            | 91.5 mm version (with brake)                                                      |
| Overall Length           | 91.5 ± 0.5 mm                                                                     |
| Referenced Length        | 87.5 mm                                                                           |
| Outer Diameter           | Ø80 h7                                                                            |
| Front Interface          | Ø67 h7; Ø75 and Ø61 reference diameters                                           |
| Through Hole             | Ø18 through                                                                       |
| Brake Torque             | 1 N·m                                                                             |
| Communication Interfaces | CAN, Power + CAN, 24-48 V power supply connector, battery connector, down port    |
| Mounting Features        | 14 × M2.5-6H depth 7; 16 × Ø3.5 depth 8.5 / M3-6H depth 6; hole patterns as shown |

Drawing: TSL-CRA-RI70-80 - 91.5 mm With Brake Version

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