



TSL-CRA-RI40-52

Ø52 mm Robot Joint Module | Harmonic Gearbox

Compact integrated joint module with 51:1 / 101:1 harmonic reduction options.

Reduction Ratio

51:1 / 101:1

Rated Torque

3.5 / 5 N·m

Peak Torque

8.3 / 11 N·m

Supply Voltage

24-48 V

1. Electrical, Mechanical and Control Parameters

Parameter	Unit	51	101
Start-Stop Peak Torque	N·m	8.3	11
Maximum Allowable Average Load Torque (Robot Scenario)	N·m	5.5	8.9
Rated Torque at 2000 rpm/(Reduction Ratio) (Industrial Scenario)	N·m	3.5	5
Output Shaft Peak Speed	rpm	118	59
Rated Speed (with 1/2 Rated Torque)	rpm	80	40
Backlash	arcsec	40	30
Rated Power	W	50	
Supply Voltage	V	24-48	
Encoder Resolution	bit	16	
Communication Bus	-	CAN	
Brake Torque (Without Brake / With Brake)	N·m	0 / 0.15	
Stiffness	10 ⁴ N/rad	0.22	
Allowable Radial Load	kN	5.31	
Allowable Axial Load	kN	10.59	
Allowable Bending Moment	N·m	82	
Length (Without Brake / With Brake)	mm	62±0.5 / 82±0.5	
Through Hole	mm	12	
Weight (Without Brake / With Brake)	kg	0.32 / 0.42	
Inertia (Without Brake / With Brake)	g·cm ²	73 / 116.2	

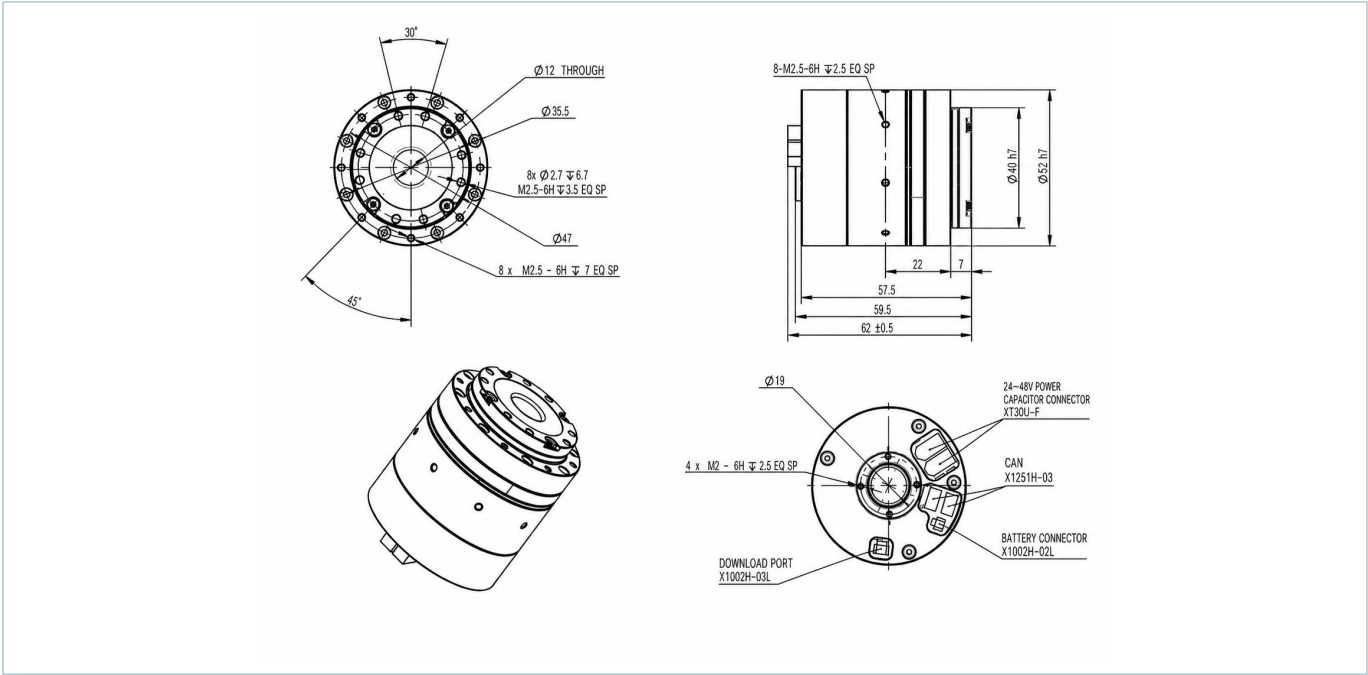
Parameters are for reference only. For final installation dimensions, refer to the drawings on pages 2-3.

TSL-CRA-RI40-52

Ø52 mm Robot Joint Module | Harmonic Gearbox

2. Dimension Drawing - 62 mm Version - Without Brake

All dimensions are in millimeters unless otherwise specified.



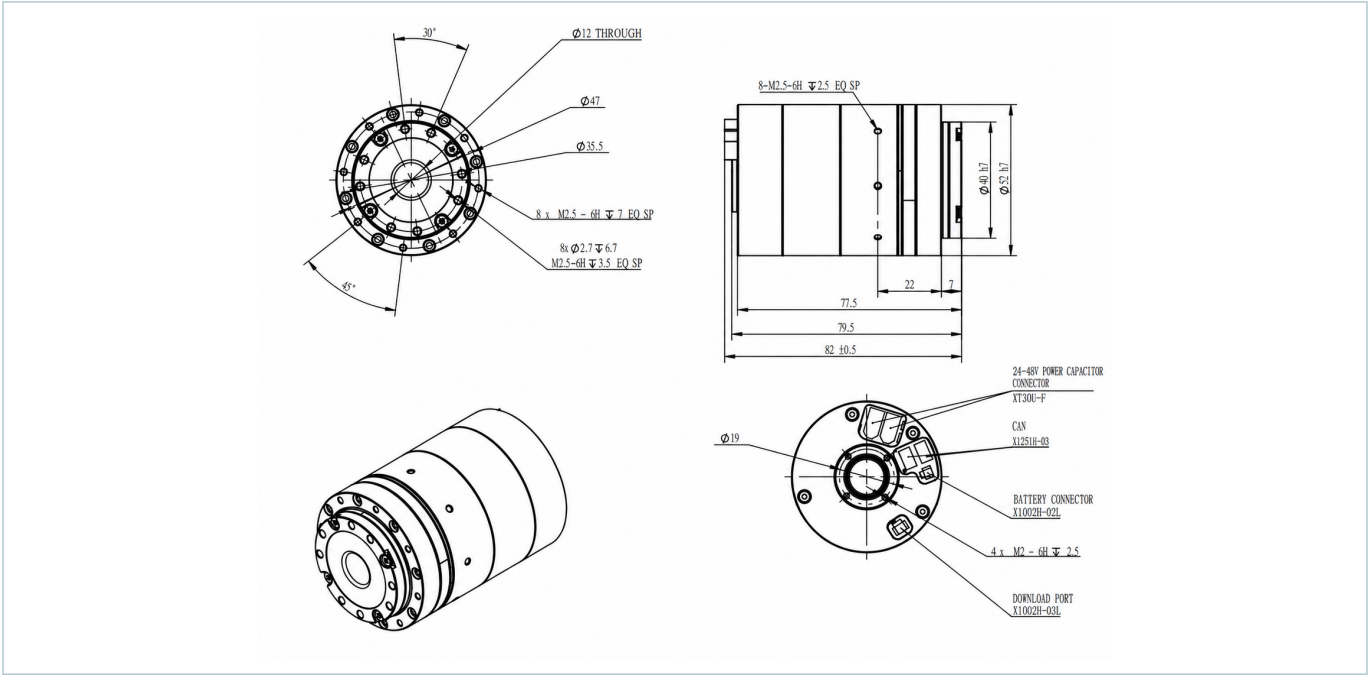
Configuration	62 mm version (without brake)
Overall Length	62 ± 0.5 mm
Referenced Lengths	57.5 mm / 59.5 mm
Outer Diameter	Ø52 h7
Front Interface	Ø40 h7; Ø47 and Ø35.5 reference diameters
Hollow Shaft Bore	Ø12 through
Brake Torque	0 N·m (no brake)
Communication Interfaces	CAN, power capacitor connector, battery connector, download port
Mounting Features	Multiple M2.5 and M2 threaded holes as shown
Drawing: TSL-CRA-RI40-52 - 62 mm Without Brake Version	
Version V1.0 Updated 2025-08-09	

TSL-CRA-RI40-52

Ø52 mm Robot Joint Module | Harmonic Gearbox

3. Dimension Drawing - 82 mm Version - With Brake

All dimensions are in millimeters unless otherwise specified.



Configuration	82 mm version (with brake)
Overall Length	82 ± 0.5 mm
Referenced Lengths	77.5 mm / 79.5 mm
Outer Diameter	Ø52 h7
Front Interface	Ø40 h7; Ø47 and Ø35.5 reference diameters
Hollow Shaft Bore	Ø12 through
Brake Torque	0.15 N·m
Communication Interfaces	CAN, power capacitor connector, battery connector, download port
Mounting Features	Multiple M2.5 and M2 threaded holes as shown
Drawing: TSL-CRA-RI40-52 - 82 mm With Brake Version	
Version V1.0 Updated 2025-08-09	