



TSL-CRA-RI50-60

Ø60 mm Robot Joint Module | Harmonic Gearbox

Compact integrated joint module with 51:1 / 81:1 / 101:1 harmonic reduction options

Reduction Ratio	Rated Torque	Peak Torque	Supply Voltage
51:1 / 81:1 / 101:1	6.6 / 9.6 / 9.6 N·m	23 / 29 / 34 N·m	24-48 V

1. Electrical, Mechanical and Control Parameters

Parameter	Unit	51	81	101
Start-Stop Peak Torque	N·m	23	29	34
Maximum Allowable Average Load Torque (Robot Scenario)	N·m	8.60	13.50	13.50
Rated Torque at 2000 rpm/(Reduction Ratio) (Industrial Scenario)	N·m	6.60	9.60	9.60
Output Peak Speed	rpm	97	61	49
Rated Speed (with 1/2 Rated Torque)	rpm	75	46	37
Backlash	arcsec	20	20	10
Rated Power	W	85		
Supply Voltage	V	24-48		
Encoder Resolution	bit	16		
Communication Bus	-	CAN		
Brake Torque (No Brake/With Brake)	N·m	0/0.03		
Stiffness	10 ⁴ N/rad	0.32	0.45	0.45
Radial Allowable Load	kN	6.80		
Axial Allowable Load	kN	15.40		
Allowable Bending Moment	N·m	146		
Length (No Brake/With Brake)	mm	63±0.5/81.5±0.5		
Through Hole	mm	12		
Weight (No Brake/With Brake)	kg	0.45/0.58		
Inertia (No Brake/With Brake)	g·cm ²	158.8/228.8		

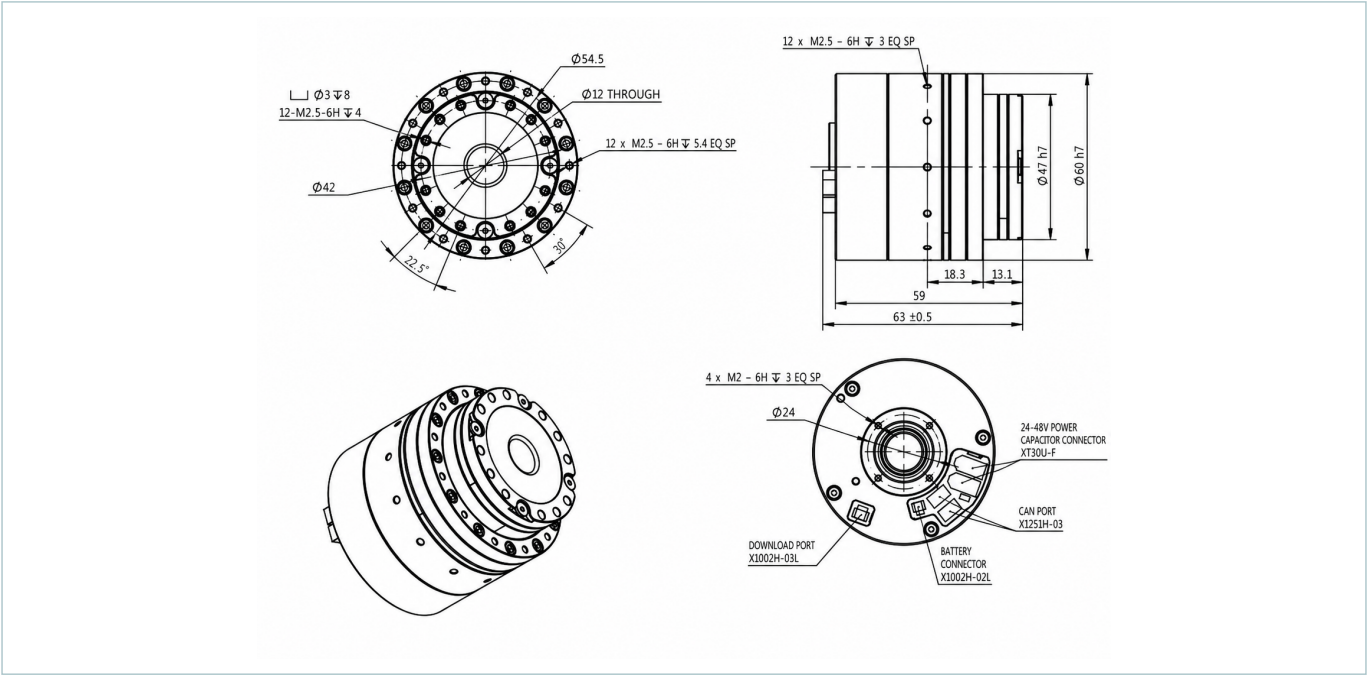
Parameters are for reference only. For final installation dimensions, refer to the drawings on pages 2-3.

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2. Dimension Drawing - 63 mm Version - Without Brake

All dimensions are in millimeters unless otherwise specified.



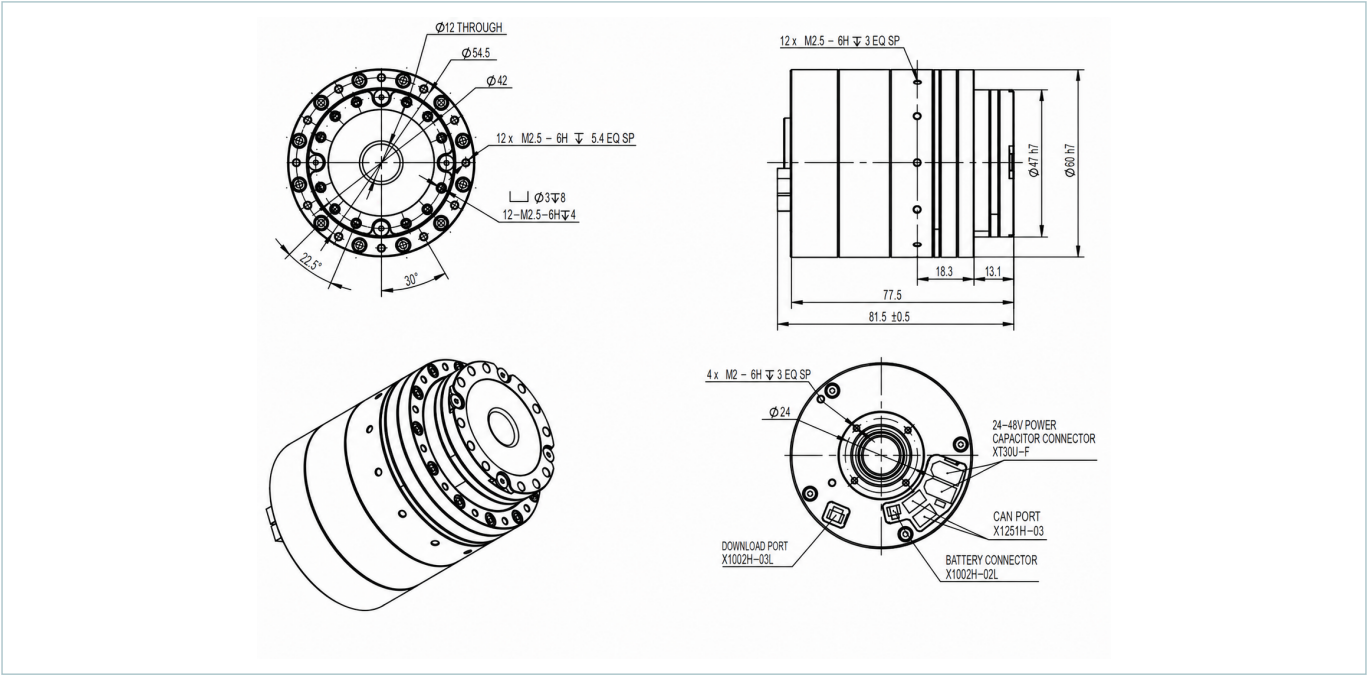
Configuration	63 mm version (without brake)
Overall Length	63 ± 0.5 mm
Referenced Length	59 mm
Outer Diameter	Ø60 h7
Front Interface	Ø47 h7; Ø54.5 and Ø42 reference diameters
Through Hole	Ø12 through
Brake Torque	0 N·m (no brake)
Communication Interfaces	CAN port, power capacitor connector, battery connector, download port
Mounting Features	Multiple M2.5 and M2 threaded holes as shown
Drawing: TSL-CRA-RI50-60 - 63 mm Without Brake Version	
Version V1.0 Updated 2025-08-09	

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3. Dimension Drawing - 81.5 mm Version - With Brake

All dimensions are in millimeters unless otherwise specified.



Configuration	81.5 mm version (with brake)
Overall Length	81.5 ± 0.5 mm
Referenced Length	77.5 mm
Outer Diameter	Ø60 h7
Front Interface	Ø47 h7; Ø54.5 and Ø42 reference diameters
Through Hole	Ø12 through
Brake Torque	0.03 N·m
Communication Interfaces	CAN port, power capacitor connector, battery connector, download port
Mounting Features	Multiple M2.5 and M2 threaded holes as shown
Drawing: TSL-CRA-RI50-60 - 81.5 mm With Brake Version	
Version V1.0 Updated 2025-08-09	