

F7 Robot

Six-axis robot with slender design and exceptional reach



The Thermo Scientific F7™ robot, with slender design and impressive reach, is perfectly suited for a wide variety of automated applications. The F7 comes complete with servo gripper, and our user-friendly Thermo Scientific MoverFrameWork™ teaching software. When combined with our industry leading Thermo Scientific Momentum™ scheduling software, the solution provides exceptional performance, and superior reliability.

Features

- 6 degrees of freedom
- $\pm 0.02\text{mm}$ repeatability at full payload and full speed within the entire robot work envelope
- Up to 7kg payload at wrist and inertias
- Highest joint speeds and track axis readiness, maximize throughput
- Tabletop size, slim wrist, and small footprint permit operation in tight work spaces
- Collaborative mode as an option
- Enclosed mechanical design eliminates cables and hose snagging

- Upright, angle, wall or invert mounting increases installation flexibility
- Higher rigidity and the most advanced servo technology enable smooth motion without vibration in high speed operation
- Communication capabilities via standard ethernet and serial connections

Multiple Applications

- Screening workflows
- Synthetic biology
- Compound management
- Clinical sample handling
- qPCR/PCR preparation
- Sample preparation
- Biochemical assays
- Nucleic acid extraction
- ELISA assays



Work Environments

- Vertical workcells
- Hepa enclosures
- Cleanrooms

Robot Reliability

- The latest generation of a proven design
- Sealed bearings and brushless AC motors
- Grease fittings on all lubrication points for quick and easy preventive maintenance

Robot Controller and Options

- Track-axis ready
- Fail-safe mechanical brakes on all joints
- iPendant™, a color, internet-ready teach pendant for even easier programming and custom cell user interface design
- Extended networked I/O capabilities
- Supports a variety of intelligent functions including iRVision™ (built-in vision-ready controller) and force sensing
- IP67 rating for the entire robot and IP69 rating on the upper and lower arms allows it to withstand harsh environments
- 10m controller-to-robot connection

Thermo Scientific F7 Specifications

Items		
Axes		6
Payload - wrist (kg)		7
Reach (mm)		717
Repeatability (mm)		+/-0.02
Interference radius (mm)		340 (std.) / 360 (option)
Motion range (degrees)	J1	360
	J2	245
	J3	420
	J4	380
	J5	250
	J6	720
Motion speed (degrees/s)	J1	450
	J2	380
	J3	520
	J4	550
	J5	545
	J6	1000
Wrist moment (N-m)	J4	16.6
	J5	16.6
	J6	9.4
Wrist inertia (kg-m ²)	J4	0.47
	J5	0.47
	J6	0.15
Mechanical brakes		all axes
Mechanical weight (kg)		25
Mounting method ⁽¹⁾		Floor, ceiling, angle and wall
Installation environment:		
Ambient temperature °C		0 - 45
Humidity (non-condensing)		Standard Operation: 75% or less, non-condensing. Short Term (less than one month): 95% or less
IP Rating(s)		IP69 upper and lower arms

Notes: (1) J1 and J2 axis motion range will be limited for angle and wall mount installations

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Find out more at www.thermofisher.com/labautomation

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