

force dimension

sigma.7 haptic device

force feedback interface



With its unique **7 active degrees-of-freedom**, the **sigma.7** is the most advanced master haptic device ever designed by Force Dimension. Its end-effector covers the **natural range of motion** of the human hand and is compatible with **bi-manual teleoperation** console design. Its unique **custom-designed actuators** offer a very high level of forces and torques, making it the most accomplished master device available today. The combination of **full gravity compensation** and **driftless calibration** contributes to greater user comfort and accuracy. Conceived and manufactured in Switzerland, the **sigma.7** is designed for demanding applications where **performance and reliability** are critical.

applications

The **sigma.7** provides active force and torque-feedback, as well as active grasping for a wide range of applications:

- › medical and space robotics
- › micro and nano manipulators
- › teleoperation consoles
- › virtual simulations
- › training systems
- › research



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sigma.7

workspace	translation	Ø 190 x 130 mm
	rotation	235 x 140 x 200 deg
forces	grasping	25 mm
	translation	20.0 N
resolution	rotation	400 mNm
	grasping	± 8.0 N
	translation	0.0015 mm
	rotation	0.013 deg
	grasping	0.006 mm

electronics

interface	standard	USB 2.0
	refresh rate	up to 4 KHz
power	universal	110V - 240V

software

platforms	Microsoft	Windows
	Linux	all distributions
	Apple	macOS
	Blackberry	QNX
	WindRiver	VxWorks
software	haptic SDK	
	robotic SDK	

features

structure	delta-based parallel kinematics
	hand-centered rotations
	rotations decoupled from translations
	active gravity compensation
calibration	automatic
	driftless
user input	1 haptic programmable button
	4 programmable input channels
safety	velocity monitoring
	electromagnetic damping
options	right- or left-handed
	integration in custom consoles

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