The Virtuose 6D TAO is a 6 active degrees-of-freedom haptic device with a passive gripper. Thanks to its large workspace, interaction capacities and EtherCAT interface, it enables and eases a slave robot control.

# Industrial Teleoperation

# Nuclear Teleoperation

### 6 Active Degrees-of-Freedom – Passive Gripper
- Passive weight balancing
- EtherCAT communication system
- TREH Handle (TeleRobotic Ergonomic Handle), designed for Master – Slave operations, including a dead-man function
- Button Box: 4 dedicated buttons with switch to freeze the pinch
- Reduced weight, allowing transportation without specific equipment
- Dedicated plug-ins for: Unity3D™, 3DExperience™, Catia™ & Delmia™ VS, Solidworks™, Siemens Tecnomatix™ & Classic Jack™
- Drivers (binary and/or source code) available for: Python™, Worldviz Vizard™, ROS™, CHAI3D™, ODE™, Matlab Simulink™, Nvidia Flex™, ...

### Modularity
The user takes hold of the haptic device using a gripper or handle placed at the tip (called “end-effector”). The gripping tool is equipped with two buttons, one 3 position-button and a 7th DOF with a passive gripper. The button box is equipped with three buttons and three multiple-position buttons.

### Technical

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Translation workspace</td>
<td>1070 x 458 x 820 mm</td>
</tr>
<tr>
<td>Rotation Workspace</td>
<td>330° x 130° x 270°</td>
</tr>
<tr>
<td>Translation force: Peak, Continuous</td>
<td>42 N , 12 N</td>
</tr>
<tr>
<td>Rotation force: Peak, Continuous</td>
<td>5 Nm , 1.4 Nm</td>
</tr>
<tr>
<td>Position resolution</td>
<td>0.013 mm</td>
</tr>
<tr>
<td>Rotation resolution</td>
<td>0.0018°</td>
</tr>
<tr>
<td>Device Weight</td>
<td>12 kg</td>
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</tbody>
</table>

### Electrical
- Power supply: 100-240 VAC 50/60Hz single phase
- Average consumption: 200W
- Max consumption: 540W

### Software
- Maximum translation stiffness: 2000 N/m
- Maximum rotation stiffness: 40 Nm/rad
- Update Rate: 1000 Hz

The Virtuose 6D TAO is also available upside-down. We are available to discuss with you any specific request for integration.