Stirling Dynamics supports the world’s leading simulator manufacturers in delivering state-of-the-art training platforms for complex and demanding military applications. We provide our customers with intelligent, integrated and highly dynamic seats and G-seats for combat, aircraft, lead-in trainers and helicopter training simulators. Stirling's motion cueing systems offer some of the most advanced and compact technology on the market today.
DATA SHEET - Motion Cueing Systems

<table>
<thead>
<tr>
<th>Motion Cues</th>
<th>Typical Displacement</th>
<th>Typical Velocity</th>
<th>Typical Acceleration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seat Pan Roll</td>
<td>±20mm (±0.79in)</td>
<td>100mm/s (3.94in/s)</td>
<td>0.5g (4,905mm/s^2, 193in/s^2)</td>
</tr>
<tr>
<td>Seat Pan Heave</td>
<td>±20mm (±0.79in)</td>
<td>100mm/s (3.94in/s)</td>
<td>0.5g (4,905mm/s^2, 193in/s^2)</td>
</tr>
<tr>
<td>Back Pad Sway</td>
<td>±37.5mm (±1.48in)</td>
<td>100mm/s (3.94in/s)</td>
<td>0.5g (4,905mm/s^2, 193in/s^2)</td>
</tr>
<tr>
<td>Back Pad Surge</td>
<td>±17.5mm (±0.69in)</td>
<td>100mm/s (3.94in/s)</td>
<td>0.5g (4,905mm/s^2, 193in/s^2)</td>
</tr>
<tr>
<td>Lap Harness</td>
<td>±20mm (±0.79in)</td>
<td>100mm/s (3.94in/s)</td>
<td>0.5g (4,905mm/s^2, 193in/s^2)</td>
</tr>
<tr>
<td>Shoulder Harness</td>
<td>±20mm (±0.79in)</td>
<td>100mm/s (3.94in/s)</td>
<td>0.5g (4,905mm/s^2, 193in/s^2)</td>
</tr>
<tr>
<td>Seat Height</td>
<td>±20mm cueing (±0.79in) total travel 254mm (10in)</td>
<td>250mm/s (9.84in/s)</td>
<td>1.0g (9,810mm/s^2, 386in/s^2)</td>
</tr>
</tbody>
</table>

### Associated Systems

**Feature**

- Operating pressure range: 0 – 2.5 psi
- Safety pressure relief limit: 3.0 psi
- Time to achieve 95% inflation (0 – 2.5 psi): <0.1s
- Time to achieve 95% deflation (2.5 – 0 psi): <0.5s
- Continuous flow capability: 200 l/min

**Anti G-Suit**

Multiple sensing options can be provided including; go-forward lever, emergency oxygen handle, armed/safe lever, ejection firing handle.

**Sensed functions (seat type dependent)**

- Providing additional high frequency inputs (20 – 80Hz) to the seat system to replicate inputs such as gun-fire and blade passing frequencies.

**System Monitoring**

The MCS system includes comprehensive reporting of system commands, operation states and error reporting. Monitoring and diagnosis information is available via messaging including initialisation built in test (IBIT) and continuous BIT.

**Buffet Performance**

- Amplitude at 1Hz: ±3.0mm
- Amplitude at 20Hz: ±0.6mm
- Amplitude at 30Hz: ±0.3mm

### Specification

**Operating Load**

Up to 115kg (equivalent pilot mass)

**Latency**

Total demand-to-output latency, inclusive of system frame time, is less than 50ms

**Documentation Pack**

- User guide
- Maintenance manual
- Message definition document
- Engineering interface specification
- Graphical user interface software and documentation

**Power Requirements**

Single or three phase supply, 2-4 kW*

**Interface to Host**

Ethernet (UDP)

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*Power Requirements Dependent on Seat Type and Customer System Requirements