HF0103-32 series high frequency/microwave rotary joint

Sensor HF0103-22 series RF rotary joint is used transmitting of analog and digital signals, RF Channel, can be customized to combine power/signal transmitting (18~24 wires), RG405 connector, can add SMA, MCX, MMCX, etc. connectors.

Part No. Description

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HF0103-32</td>
<td>Single Channel RF Rotary Joint, Frequency DC~3GHz, OD 32.8mm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Power Circuits</th>
<th>Signal Circuits</th>
</tr>
</thead>
<tbody>
<tr>
<td>For example: 065: 6 circuits signal@2A</td>
<td>For example: 125: 12 circuits signal@2A</td>
</tr>
</tbody>
</table>

Examples

- F0103-32: 1 channel RF rotary joint, frequency DC~3GHz, OD 32.8mm
- HF0103-32-12S: 1 channel RF rotary joint+12 circuits signal@2A, frequency DC~3GHz, OD 32.8mm
- HF0103-32-0610-12S: 1 channel RF rotary joint+6 circuits@10A+12 circuits signal@2A, frequency DC~3GHz, OD 32.8mm

Standard Model List

<table>
<thead>
<tr>
<th>Model</th>
<th>List</th>
<th>RF Channel</th>
<th>Frequency</th>
<th>Circuits no. (10A)</th>
<th>Circuits no. (0~2A)</th>
<th>Length L(mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HF0103-32-18</td>
<td>1 channel</td>
<td>DC~3GHz</td>
<td>0</td>
<td>18 channels</td>
<td>41.7mm</td>
<td></td>
</tr>
<tr>
<td>HF0103-32-24</td>
<td>1 channel</td>
<td>DC~3GHz</td>
<td>0</td>
<td>24 channels</td>
<td>41.7mm</td>
<td></td>
</tr>
</tbody>
</table>

Rotary joint Spec.

<table>
<thead>
<tr>
<th>Connector type</th>
<th>coax RG405 (can add SMA, MCX, MMCX connectors)</th>
<th>Style</th>
<th>I type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>DC to 3 GHz</td>
<td>Phase WOW (Max degree)</td>
<td>1°</td>
</tr>
<tr>
<td>VSWR(max)</td>
<td>1.7@DC to 3 GHz</td>
<td>Insertion loss</td>
<td>0.25 dB @ DC to 1.5 GHz</td>
</tr>
<tr>
<td>VSWR fluctuation(max)</td>
<td>0.05</td>
<td>Insertion loss fluctuation</td>
<td>0.05 dB</td>
</tr>
<tr>
<td>Peak power(max)</td>
<td>500W</td>
<td>Average power(max)</td>
<td>200 W @ 1.5 GHz</td>
</tr>
<tr>
<td>Rotating speed(max)</td>
<td>250RPM</td>
<td>Working life</td>
<td>&gt; 10 millions for ref (depe nds on working conditions)</td>
</tr>
<tr>
<td>Starting torque(max)</td>
<td>0.5N.cm</td>
<td>Rotating torque(max)</td>
<td>0.5 N.cm</td>
</tr>
<tr>
<td>Connector axial load(max)</td>
<td>±0.1N</td>
<td>Connector radial load(max)</td>
<td>±0.1N</td>
</tr>
<tr>
<td>Insulating material</td>
<td>PTFE</td>
<td>IP grade</td>
<td>IP 40 acc. EN 60529</td>
</tr>
<tr>
<td>Temperature</td>
<td>-55 to +85°C (work temperature) -55 to +85°C (storage temperature)</td>
<td>Humidity</td>
<td>95% (work humidity)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>85% (storage humidity)</td>
</tr>
</tbody>
</table>
### Electrical slip ring Spec.

<table>
<thead>
<tr>
<th>Mechanical</th>
<th>Electrical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working life</td>
<td>&gt; 10 millions for ref (depends on working conditions)</td>
</tr>
<tr>
<td>Rotating speed</td>
<td>250RPM</td>
</tr>
<tr>
<td>Temperature</td>
<td>-30℃ ~ 80℃</td>
</tr>
<tr>
<td>Humidity</td>
<td>0 ~ 85% RH</td>
</tr>
<tr>
<td>Contact material</td>
<td>gold-gold</td>
</tr>
<tr>
<td>Housing material</td>
<td>Aluminum alloy</td>
</tr>
<tr>
<td>Torque</td>
<td>0.05N.m+0.01N.m/6 channels</td>
</tr>
<tr>
<td>IP grade</td>
<td>IP51</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Spec.</th>
<th>Power</th>
<th>Signal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage range</td>
<td>0 ~ 240VAC/VDC</td>
<td>0 ~ 240VAC/VDC</td>
</tr>
<tr>
<td>Insulation resistance</td>
<td>&gt; 300MΩ/300VDC</td>
<td>&gt; 300MΩ/300VDC</td>
</tr>
<tr>
<td>Lead wire length</td>
<td></td>
<td>standard 150mm(can be customized)</td>
</tr>
<tr>
<td>Lead wire spec.</td>
<td>AWG#26 Silver-plated teflon</td>
<td></td>
</tr>
<tr>
<td>Insulation resistance</td>
<td>300VAC@50Hz,60s</td>
<td>&lt; 0.01Ω</td>
</tr>
</tbody>
</table>

**Color Code of Lead Wire**

<table>
<thead>
<tr>
<th>ring #</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>color</td>
<td>BLK</td>
<td>BRN</td>
<td>RED</td>
<td>ORG</td>
<td>YEL</td>
<td>GRN</td>
<td>BLU</td>
<td>PUR</td>
<td>GRY</td>
<td>WHT</td>
<td>PINK</td>
<td>LGT BLU</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ring #</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
<th>17</th>
<th>18</th>
<th>19</th>
<th>20</th>
<th>21</th>
<th>22</th>
<th>23</th>
<th>24</th>
</tr>
</thead>
<tbody>
<tr>
<td>color</td>
<td>WHT/BLK</td>
<td>WHT/BRN</td>
<td>WHT/RED</td>
<td>WHT/ORG</td>
<td>WHT/YEL</td>
<td>WHT/GRN</td>
<td>WHT/BLU</td>
<td>WHT/PUR</td>
<td>WHT/GRE</td>
<td>BLK/RED</td>
<td>BLK/BRN</td>
<td>Transparent</td>
</tr>
</tbody>
</table>

Remark: “1” : the first wire from rotor side , HF0103-32S wire color sequence: BLK/BRN/RED/ORG/YEL/GRN , 24 color wires as one group , if more than 24 wires, repeat as sequence , use number tube to tell group 1#, 2#....