

Rotary Joint || BN 153189



**Radio frequency characteristics**

Channel designation	Inner channel (CH1)	Outer channel (CH2)
Interface type / material / surface finish	SMA-f (50 Ω) / copper alloy / gold plated	SMA-f (50 Ω) / copper alloy / gold plated
Interface orientation	style I	style I
Frequency range	DC to 18 GHz	DC to 4 GHz
Peak power capability	3 kW @ sea level 1.5 KW @ operating altitude: 3000m	3 kW @ sea level 1.5 KW @ operating altitude: 3000m
Average power capability	200 W @ 1 GHz	200 W @ 1 GHz
VSWR, max.	1.2 @ DC to 4 GHz 1.5 @ 4 to 18 GHz	1.2 @ DC to 1.4 GHz / 1.4 @ 1.4 to 2 GHz 1.8 @ 2 to 3 GHz / 2.5 @ 3 to 4 GHz
VSWR variation over rotation, max.	0.05	0.1 @ DC to 2 GHz 0.4 @ 2 to 4 GHz
Insertion loss, max.	0.15 dB @ DC to 4 GHz 0.4 dB @ 4 to 18 GHz	0.5 dB @ DC to 2 GHz 1.0 dB @ 2 to 4 GHz
Insertion loss variation over rotation, max.	0.05 dB	0.1 dB @ DC to 2 GHz 0.3 dB @ 2 to 4 GHz
Phase variation over rotation, max.	1 deg. @ DC to 18 GHz	1 deg. @ DC to 1.1 GHz 2 deg. @ 1.1 to 4 GHz
Isolation, min.	70 dB @ DC to 4 GHz	
DC carrying capability	0.5 A, 48 VDC @ full RF avg. power 2 A, 48 VDC @ RF avg. power 5 W 5 A*, 48 VDC @ RF avg. power 5 W	0.5 A, 24 VDC @ full RF avg. power

*Conditions:* DC applied to one channel only  
\* applied for max. 1 x 10E6 revolutions or 50 h

*Further remark:*  
Absolute phase difference 35±4 deg. @ 1 to 1.1 GHz

## Rotary Joint || BN 153189

**Mechanical characteristics**

Rotating speed, max. / nominal	60 / 30 rpm
Life, min.	$5 \times 10^6$ revolutions
Torque (room / min. temperature), max.	0.05 Nm / 0.05 Nm @ start-up 0.05 Nm / 0.05 Nm @ rotation
Interface loads, max.	$\pm 12.5$ N in axial direction $\pm 25$ N in radial direction
Case material	aluminum alloy
Case surface finish	chromate conversion coat
IP protection level	IP50*
Weight, approx.	0.15 kg
Marking	adhesive label

**Environmental conditions**

<b>Operation</b>	
Ambient temperature range	-55 to +71°C
Relative humidity, max.	95% (non-condensing)
<b>Storage</b>	
Ambient temperature range	-55 to +85°C
Relative humidity, max.	95% (non-condensing)

**Applicable Documents**

Drawing	153189-0E Issue Q
Technical information	"Rotary Joints – Glossary", Technical Document TD-00021, Spinner GmbH

**Further Remarks**

\*IP65 in installed position with mating connectors in a limited area and if flange is mounted on top side - see 153189-0E