SPINNER || PRODUCT DOCUMENTATION

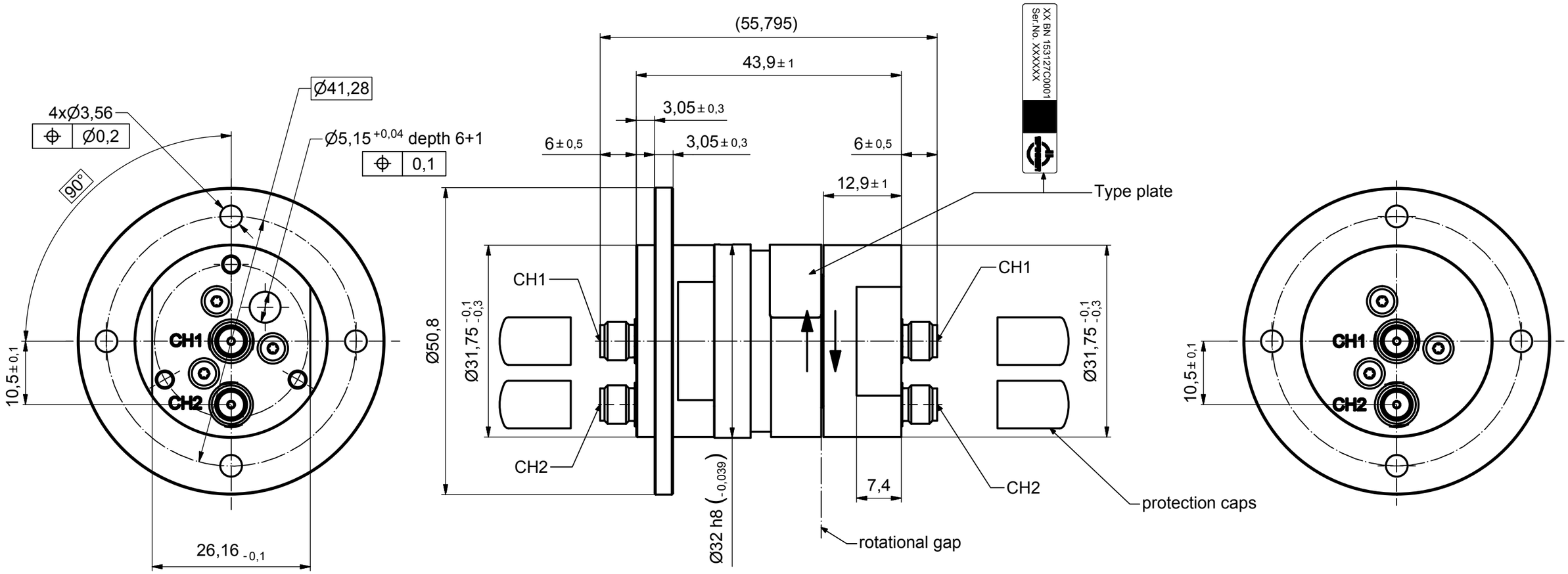
BN 153127C0001

Ser. No.: A212605

Rotary Joint

High Frequency Performance Worldwide

www.spinner-group.com



notes:

- SMA-f (50 Ohm) socket acc. (IEC 60 169-15) is mechanically compatible to 3.5mm-f (50 Ohm) socket acc. (EN 60 169-23)

- all connectors are protected with protection caps

- constructional modifications reserved

Maßangaben in mm / Dimensions in mm	Projektion E: / Projection E:				Maßstab: / Scale: 1,5:1
Allgemeintoleranzen: / General tolerances: DIN ISO 2768mH		Datum: / Date:	Name: / Name:	Bezeichnung: / Title: rotary joint 2-channel coaxial I-style 4,5/4,5	
Index: / Revision:	Änd.-Nr.: / Issue-No.:	Datum: / Date:	Name: / Name:	Erstellt: / Creator:	28.06.2013 KriwanekJ
				Geprüft: / Checked:	21.10.2013 KriwanekJ
A	Startindex	21.10.2013	KriwanekJ	Spinner GmbH, Erzgiessereistr. 33, D-80335 München	Zeichnungs-Nr.: / Drawing-No.: 153127C0001-0E; Format: A3; Blatt: / Sheet: 1; von: / of: 1

Freigegeben

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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 6 GHz	DC to 6 GHz
Peak power capability	1 kW	1 kW
Average power capability	100 W @ DC to 2 GHz 50 W @ 2 to 6 GHz	10 W
VSWR, max.	1.15 @ DC to 2.0 GHz 1.25 @ 2.0 to 6.0 GHz	1.3 @ DC to 2.0 GHz 1.5 @ 2.0 to 4.0 GHz 1.6 @ 4.0 to 6.0 GHz
VSWR variation over rotation, max.	0.05	0.2
Insertion loss, max.	0.20 dB @ DC to 2.0 GHz 0.3 dB @ 2.0 to 6.0 GHz	0.2 dB @ DC to 2.0 GHz 0.3 dB @ 2.0 to 4.0 GHz 0.5 dB @ 4.0 to 6.0 GHz
Insertion loss variation over rotation, max.	0.05 dB	0.15 dB
Phase variation over rotation, max.	0.5 deg.	4 deg.
Isolation, min.	50 dB	
DC carrying capability	0.5 A, 48 VDC @ full RF avg. power 2 A, 48 VDC @ RF avg. power 5 W	0.5 A, 24 VDC @ full RF avg. power

Conditions: *DC applied to one channel only*

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Mechanical characteristics

Rotating speed, max. / nominal	60 / 30 rpm
Life, min.	5 x 10^6 revolutions
Torque (room / min. temperature), max.	0.05 Nm / - @ start-up 0.05 Nm / - @ rotation
Interface loads, max.	±5 N in axial direction ±5 N in radial direction
Case material	aluminum alloy
Case surface finish	chromate conversion coat per MIL-DTL-5541 type 1 or type 2
IP protection level	IP64
Weight, approx.	0.13 kg
Marking	adhesive label

Environmental conditions

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

Applicable Documents

Drawing	153127C0001-0E Issue A
Technical information	“Rotary Joints – Glossary”, Technical Document TD-00021, Spinner GmbH

Further Remarks

±5 Nm axial load on interface, max

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QUALITY INSPECTION CERTIFICATE ACC. TO STANDARDS DIN 55350-18-4.2.2 AND DIN EN 10204:2004-3.1

All technical terms and definitions acc. to Technical Document TD-00021 "Rotary Joints - Glossary"
All tests performed at ambient conditions, unless otherwise stated
Specified values acc. to data sheet 153127C0001-BE Issue C
The delivery of the product is approved by Surma, 2017-08-08, all tests were passed

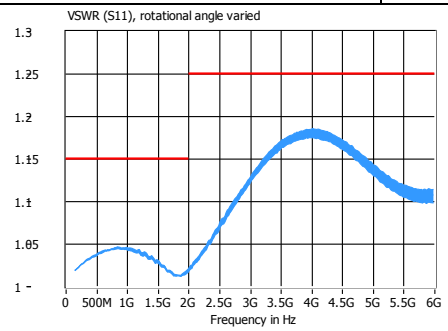
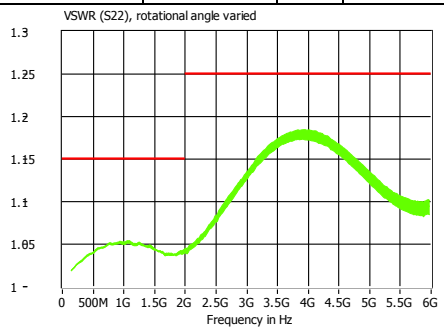
1 Mechanical Tests

Requirements	Specified values	Actual values	OK	Remarks
Starting torque	**0.05 Nm**	**0.016 Nm**	☑	
Running torque @ approx. 30 rpm	**0.05 Nm**	**0.015 Nm**	☑	

Tester, Date: Kukol, 2017-06-12

2 RF-Tests

2.1 Channel 1

Requirements	Specified values	Measured values	Sxx	OK	Remarks
VSWR	**≤ 1.15 @ 0 GHz to 2 GHz**	1.046 @ 0.825 GHz	S11	☑	
		1.053 @ 0.944 GHz	S22	☑	
	≤ 1.25 @ 2 GHz to 6 GHz	1.185 @ 4.021 GHz	S11	☑	
		1.184 @ 3.842 GHz	S22	☑	
				
VSWR variation over rotation	**≤ 0.05 @ 0 GHz to 6 GHz**	0.016 @ 5.787 GHz	S11	☑	
		0.017 @ 5.867 GHz	S22	☑	
Insertion loss	**≤ 0.2 dB @ 0 GHz to 2 GHz**	0.096 dB @ 1.837 GHz	S12	☑	
		0.103 dB @ 1.798 GHz	S21	☑	
	≤ 0.3 dB @ 2 GHz to 6 GHz	0.147 dB @ 4.041 GHz	S12	☑	
		0.151 dB @ 3.981 GHz	S21	☑	
Insertion loss variation over rotation	**≤ 0.05 dB @ 0 GHz to 6 GHz**	0.004 dB @ 1.619 GHz	S12	☑	
		0.009 dB @ 4.914 GHz	S21	☑	
Phase variation over rotation	**≤ 0.5 deg. @ 0 GHz to 6 GHz**	0.117 deg @ 2.453 GHz	S12	☑	
		0.195 deg @ 1.897 GHz	S21	☑	
Isolation to Channel 2	**≥ 50 dB @ 0 GHz to 6 GHz**	74.295 dB @ 3.505 GHz	S13	☑	
		76.078 dB @ 3.425 GHz	S31	☑	

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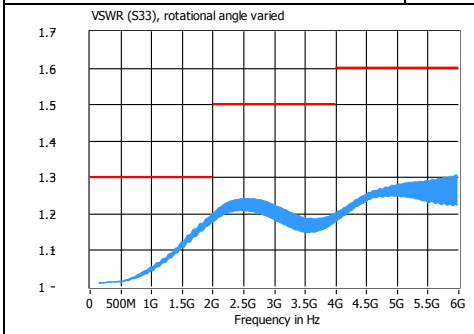
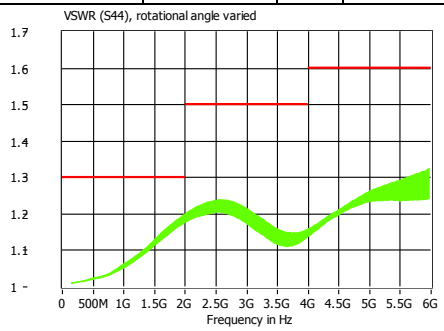
QUALITY INSPECTION CERTIFICATE ACC. TO STANDARDS DIN 55350-18-4.2.2 AND DIN EN 10204:2004-3.1

2.2 Channel 2

Requirements	Specified values	Measured values	Sxx	OK	Remarks
VSWR	**≤ 1.3 @ 0 GHz to 2 GHz**	1.197 @ 1.976 GHz	S33	☑	
		1.195 @ 1.976 GHz	S44	☑	
	≤ 1.5 @ 2 GHz to 4 GHz	1.241 @ 2.492 GHz	S33	☑	
		1.238 @ 2.552 GHz	S44	☑	
	≤ 1.6 @ 4 GHz to 6 GHz	1.306 @ 5.966 GHz	S33	☑	
		1.323 @ 5.966 GHz	S44	☑	
					
VSWR variation over rotation	**≤ 0.2 @ 0 GHz to 6 GHz**	0.082 @ 5.966 GHz	S33	☑	
		0.081 @ 5.966 GHz	S44	☑	
Insertion loss	**≤ 0.2 dB @ 0 GHz to 2 GHz**	0.172 dB @ 1.976 GHz	S34	☑	
		0.169 dB @ 1.976 GHz	S43	☑	
	≤ 0.3 dB @ 2 GHz to 4 GHz	0.201 dB @ 3.961 GHz	S34	☑	
		0.194 dB @ 3.961 GHz	S43	☑	
	≤ 0.5 dB @ 4 GHz to 6 GHz	0.281 dB @ 5.946 GHz	S34	☑	
		0.279 dB @ 5.966 GHz	S43	☑	
Insertion loss variation over rotation	**≤ 0.15 dB @ 0 GHz to 6 GHz**	0.038 dB @ 5.966 GHz	S34	☑	
		0.037 dB @ 5.926 GHz	S43	☑	
Phase variation over rotation	**≤ 4 deg. @ 0 GHz to 6 GHz**	2.016 deg @ 5.946 GHz	S34	☑	
		1.960 deg @ 5.946 GHz	S43	☑	

Tester, Date: Surma, 2017-06-12