

Coaxial Two Way Switch (DPDT) || BN 512698



Product manual: M36022

**Radio frequency characteristics**

Interface type (4 connections)	7/8" EIA according to EN 122150 (threaded flanges)					
Characteristic impedance	50 Ω					
Frequency range	0 to 100 MHz	100 to 230 MHz	230 to 860 MHz	860 MHz to 2.0 GHz	2.0 to 3.0 GHz	3.0 to 3.5 GHz
VSWR, max.	1.02	1.02	1.04	1.06	1.10	1.20
Isolation, min.	80 dB	80 dB	80 dB	70 dB	60 dB	60 dB
Insertion loss, max.	0.03 dB	0.03 dB	0.03 dB	0.05 dB	0.20 dB	0.20 dB
Average power capability * at ambient temperature -10 to +45°C	7.5 kW	4.5 kW	2.4 kW	1.5 kW	1.2 kW	1.1 kW
Peak voltage capability *	3.5 kV					

**Electrical and mechanical data**

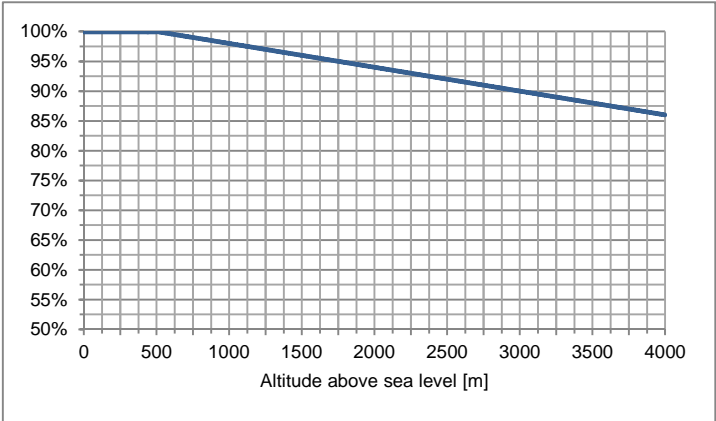
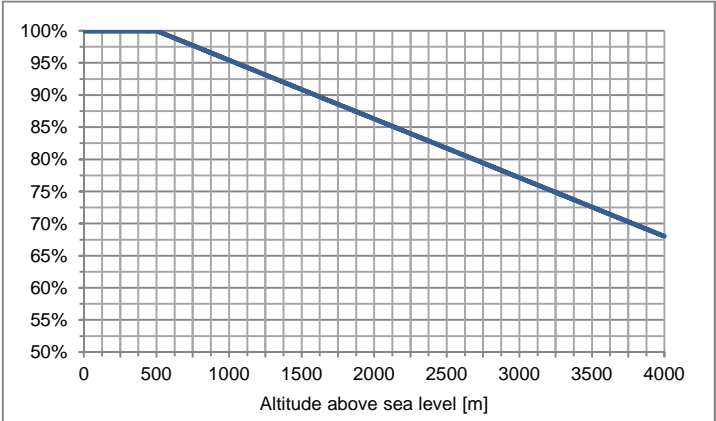
Switch type	Two way switch, DPDT	
Actuator type	Motor drive, latching, self cutoff	
Connector J2 ** for mains connection	5 pole SPINNER connector BN 126920, certified according to VDE-Reg. No. B687, DIN EN 61984: 2009-11; EN 61984: 2009	
Mains connection	L, N, PE, TN-System	
Operating	Operating voltage	187 to 253 V AC 50/60 Hz
	Current, typ. ***	0.5 A
	Nominal fuse	The switch must be externally fused by time-delay, 1 A
Connector J1 ** for control, interlock contacts and signaling	25 pole connector according to DIN 41652 / IEC 807-2	
Control	Control voltage	SELV circuits according to IEC-EN-60950-1, 8 to 31 V DC
	Current, typ. ***	22 mA
	Nominal fuse	The circuit must be externally fused to 0.5 A

Template TD-00002J

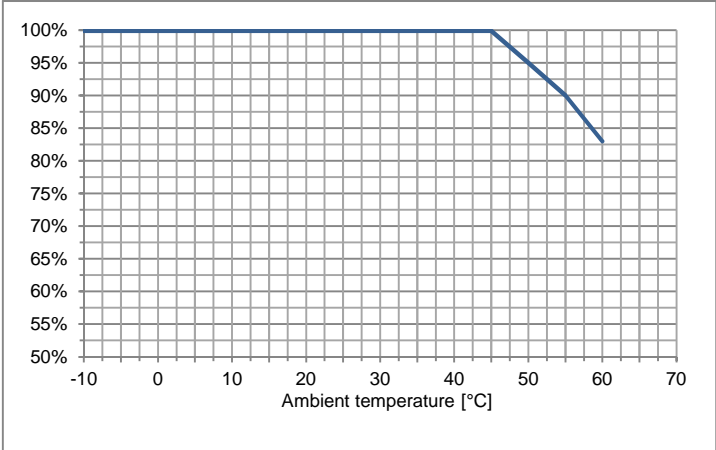
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Signal contacts Interlock contacts	Lead time typ.***	9 ms (the interlock/signal contacts open 9 ms before and close 9 ms after switching of the RF contacts)
	Maximum ratings	SELV circuits according to IEC-EN-60950-1, 42.4 V ACpk / 60 V DC / 0.5 A
	Nominal fuse	The circuit must be externally limited to 0.5 A
Switching time, typ.***		0.12 s
Command hold time, min.		0.12 s (during this time, the voltage at control input must not change)
Switching frequency, max.		10 operations per minute
Life, min.		250,000 operations
Weight, approx.		2.5 kg

Environmental conditions

Operational conditions	ETSI EN 300 019-1-3 V2.3.2 (2009-1) class 3.1 N																				
Ambient temperature ****	-10 to +60°C																				
Condensation	Not allowed																				
Relative humidity, max.	95%																				
Derating of input power with increasing altitude	<p>The maximum input power can be applied up to 500 m or 1600 ft above sea level unless noted otherwise in the data sheet. Above this height the maximum input power must be reduced as shown in the diagram.</p>  <table border="1"> <caption>Derating of input power with increasing altitude</caption> <thead> <tr> <th>Altitude above sea level [m]</th> <th>Percentage</th> </tr> </thead> <tbody> <tr><td>0</td><td>100%</td></tr> <tr><td>500</td><td>100%</td></tr> <tr><td>1000</td><td>98%</td></tr> <tr><td>1500</td><td>96%</td></tr> <tr><td>2000</td><td>94%</td></tr> <tr><td>2500</td><td>92%</td></tr> <tr><td>3000</td><td>90%</td></tr> <tr><td>3500</td><td>88%</td></tr> <tr><td>4000</td><td>85%</td></tr> </tbody> </table>	Altitude above sea level [m]	Percentage	0	100%	500	100%	1000	98%	1500	96%	2000	94%	2500	92%	3000	90%	3500	88%	4000	85%
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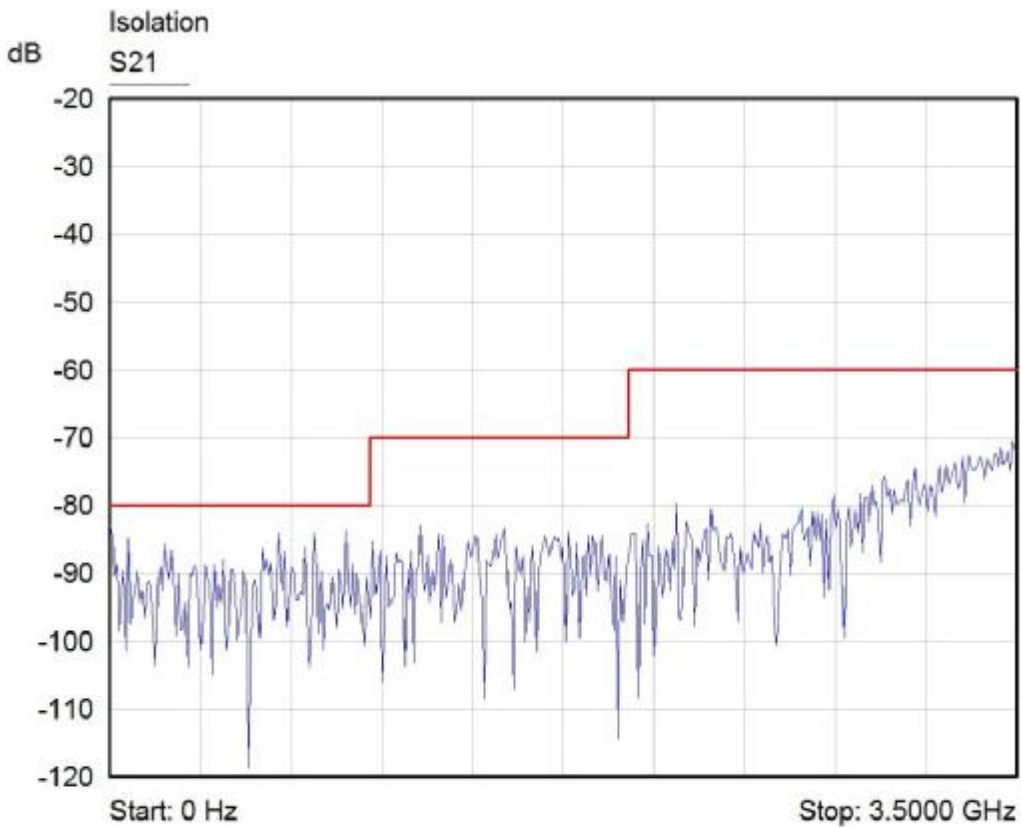
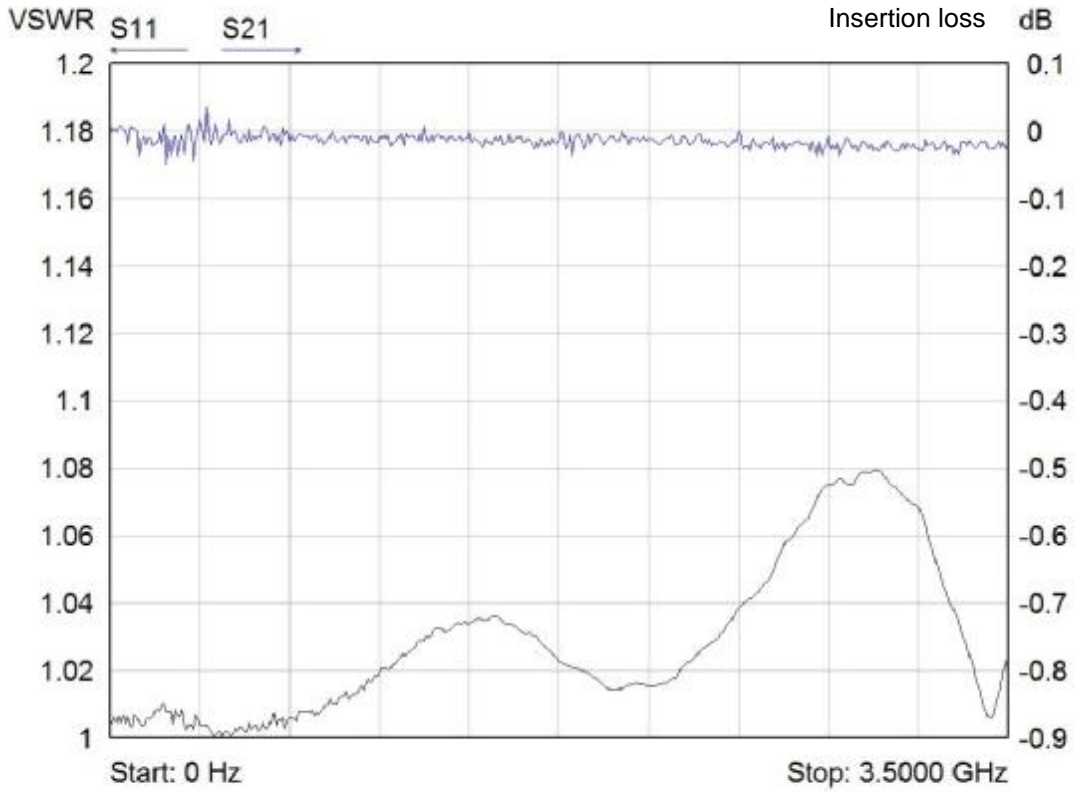
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<p>Derating of input power with increasing ambient temperature</p>	<p>The maximum input power can be applied up to +45°C ambient temperature unless noted otherwise in the data sheet. Above this ambient temperature the maximum input power must be reduced as shown in the diagram.</p>  <table border="1"> <caption>Derating of input power data points</caption> <thead> <tr> <th>Ambient temperature [°C]</th> <th>Input Power (%)</th> </tr> </thead> <tbody> <tr><td>-10</td><td>100</td></tr> <tr><td>0</td><td>100</td></tr> <tr><td>10</td><td>100</td></tr> <tr><td>20</td><td>100</td></tr> <tr><td>30</td><td>100</td></tr> <tr><td>40</td><td>100</td></tr> <tr><td>45</td><td>100</td></tr> <tr><td>50</td><td>95</td></tr> <tr><td>55</td><td>88</td></tr> <tr><td>60</td><td>82</td></tr> </tbody> </table>	Ambient temperature [°C]	Input Power (%)	-10	100	0	100	10	100	20	100	30	100	40	100	45	100	50	95	55	88	60	82
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-10	100																						
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45	100																						
50	95																						
55	88																						
60	82																						
<p>Max. altitude above sea level</p>	<p>4,000 m or 13,120 ft according to IEC EN 60664-1</p>																						
<p>Protection class</p>	<p>I according to IEC EN 61140</p>																						
<p>IP protection level</p>	<p>IP40 according to IEC EN 60529 (all interfaces equipped with appropriate gaskets)</p>																						
<p>Installation position</p>	<p>Any</p>																						
<p><b>Transport conditions</b></p>	<p>ETSI EN 300 019-1-2 V2.1.4 (2003-04) class 2.2</p>																						
<p>Ambient temperature</p>	<p>-25 to +70°C</p>																						
<p>Rain, condensation, icing</p>	<p>Not allowed</p>																						
<p><b>Storage conditions</b></p>	<p>ETSI EN 300 019-1-1 V2.1.4 (2003-04) class 1.2</p>																						
<p>Ambient temperature</p>	<p>-10 to +60°C</p>																						
<p>Rain, condensation, icing</p>	<p>Not allowed</p>																						

- \* *Standard conditions:*  
*Dielectric: Dry air under standard pressure at sea level (p = 1013 hPa)*  
*Load VSWR, max. 1.0 (no standing wave)*  
*No modulation, sinusoidal carrier only*
- \*\* *Suitable mating connector included*
- \*\*\* *At room temperature and nominal voltage 230 V AC*
- \*\*\*\* *Extended temperature range on request*

### Coaxial Two Way Switch (DPDT) || BN 512698

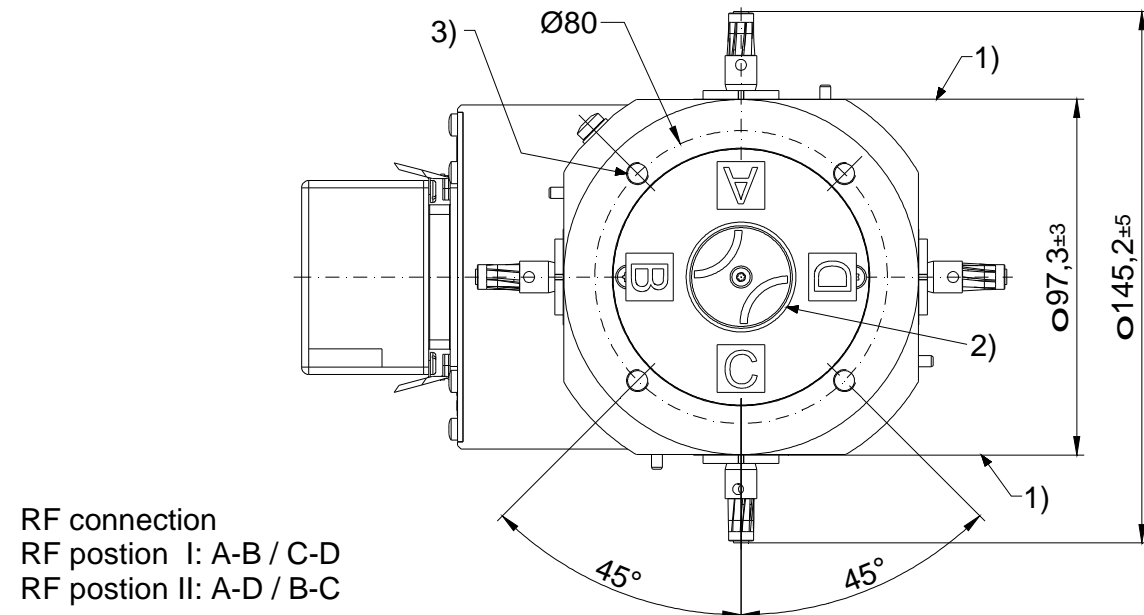
#### Typical diagrams



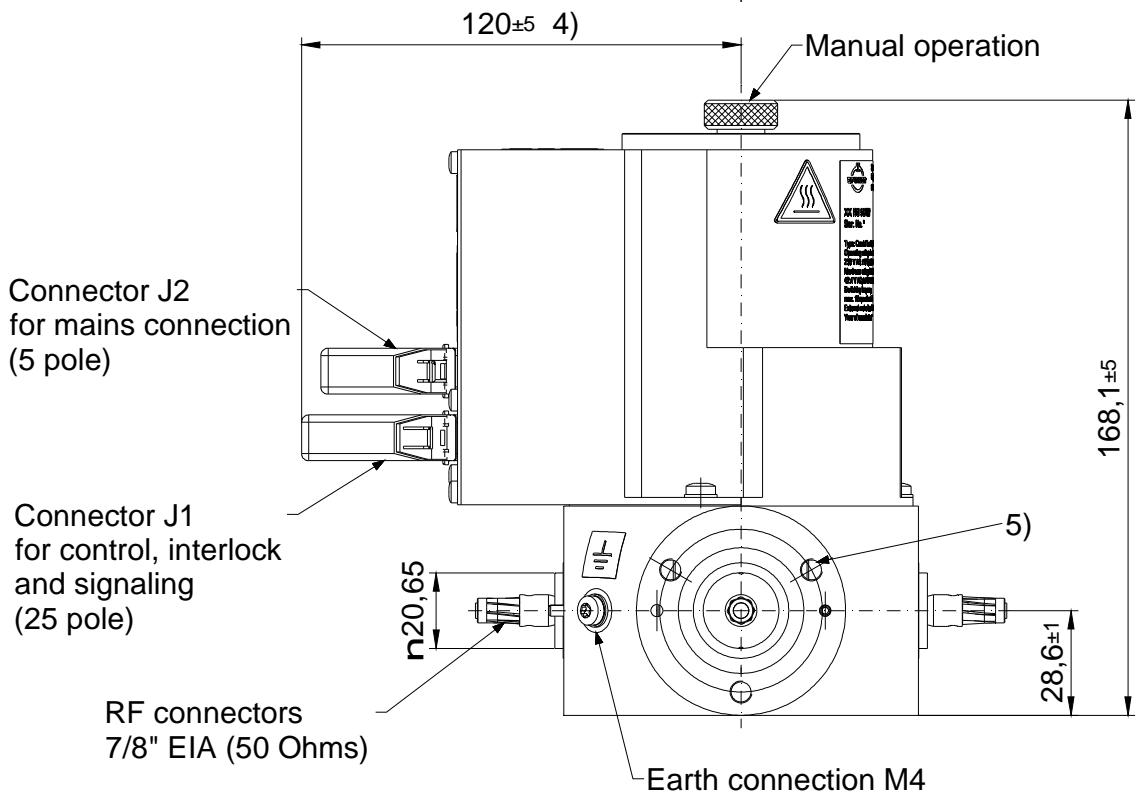
Template TD-00002J

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Outline (all dimensions in millimeters)



RF connection  
 RF position I: A-B / C-D  
 RF position II: A-D / B-C



Connector J2  
 for mains connection  
 (5 pole)

Connector J1  
 for control, interlock  
 and signaling  
 (25 pole)

RF connectors  
 7/8" EIA (50 Ohms)

Earth connection M4

- 1) Reference plane
- 2) Position indicator bottom side, current position is shown by pictogram
- 3) Four threaded mounting holes M6/12 deep
- 4) + 10 mm to disconnect the connectors
- 5) Fastening set for RF connectors is part of delivery

# Coaxial Two Way Switch (DPDT) || BN 512698

## Circuit diagram (B42000-CD, Issue E)

25-pol. Stecker (DIN 41652)  
Maximal zulässige Werte 42.4 V AC<sub>pk</sub> / 60 V DC / 0.5 A

25 pole connector (DIN 41652)  
Maximum ratings 42.4 V AC<sub>pk</sub> / 60 V DC / 0.5 A

Trägersicherheitskontakte  
Interlock contacts

Signalkontakte  
Signal contacts

Signalkontakte  
Signal contacts

Signalkontakte  
Signal contacts

Es darf nicht gleichzeitig HF-Pos. I und HF-Pos. II angesteuert werden, da dies zur Beschädigung des Schalters führt

RF pos. I and RF pos. II must not be accessed at the same time, this will lead to a switch damage

Ansteuerspannung  
Control voltage  
Uc: 8...31 V DC

Betriebsspannung  
Operating voltage  
187...253 V AC 50/60 Hz

Achtung:  
Gerät ist extern mit 2 A1 abzuschirmen!

Attention:  
The switch must be externally fused by time-delay 2 A

Schalter dargestellt in HF-Position I  
Switch shown in RF position I

HF-Pos. I  
RF pos. I

HF-Pos. II  
RF pos. II

t = 9 ms typ. \*)

A-B, C-D  
Open

A-D, B-C

S1 6-5

S2 9-8

S3 12-13

S4 18-19

S5 21-22

S6 24-23

S7 NO NC

S8 NO NC

Signalkontakte f. HF-Position I  
Signal contacts f. RF position I

Signalkontakte f. HF-Position II  
Signal contacts f. RF position II

Trägersicherheitskontakte  
Interlock contacts

Motor-Schalter-Kontakte  
Motor circuit breaker

\*) Bei Raumtemperatur und Nennspannung 230 V AC  
\*) At room temperature and nominal voltage 230 V AC

HF-Pos. I  
RF pos. I

HF-Pos. II  
RF pos. II

1) Bei Verwendung als Umschalter muss ein Anschluss abgeschlossen werden  
1) If used as a change-over switch (SPDT) one port must be terminated

Achtung: Signalkontakte auch als Trägersicherheitskontakte verwendbar!  
Attention: Signal contacts can be also used as interlock contacts.

NC ≙ normally closed  
NO ≙ normally opened

Stellung, wenn Mikroschalter nicht gedrückt ist  
Position, if microswitch is not pushed

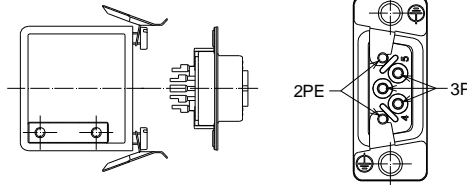
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Allgemeintoleranzen: General tolerances: 2T63mH		Name: Datum: Date:	Name: Datum: Date:	
Herz. Issue-No.:	Herz. Revision:	Erstellt: Created:	Geprüft: Checked:	
E: 01-16129 D: 01-14323 C: 01-11134	Hauptverf. Main author:	Spinner GmbH Ergersheimerstr. 33 D-80535 München		Zeichnungs-Nr.: Drawing-No.:
01.08.2016 10.02.2014 10.02.2010	Hauptverf. Main author:	Hauptverf. Main author:		B42000-CD
Frank	Frank			Format: Format:
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Coaxial Two Way Switch (DPDT) || BN 512698  
Cable socket (126919-0E, Issue D)

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 knowledge contained therein requires our express consent.

**Anleitung für den Kabelanschluss**  
**Instructions for cable connection**

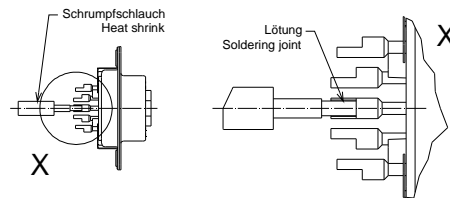
1. Entfernen des Schutzgehäuses  
Removing of the protective housing



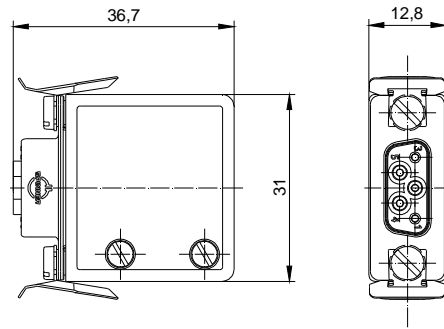
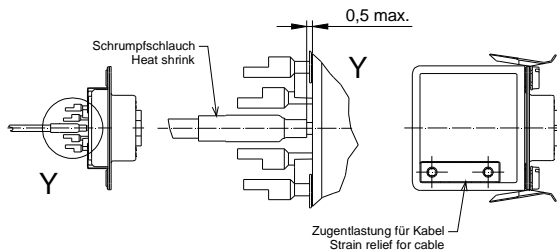
2. Absetzen der Kabelitzen  
Trimming of the cable strands



3. Anbringen der drei Schrumpfschläuche (PIN 2/4/5)  
3.a Placing of the three heat shrinks (pins 2/4/5)  
3.b Lötten der fünf Kabelitzen  
3.b Soldering of the five cable strands



4. Aufschrumpfen der drei Schrumpfschläuche (PIN 2/4/5)  
4.a Shrinking three heat shrinks (pins 2/4/5)  
4.b Montage des Schutzgehäuses  
4.b Assembling of the protective housing



Technical data

5-polige Kabelkupplung 5 pole cable socket	ohne Schaltleistung Without breaking capacity
Bemessungsspannung Rated voltage	250 V AC
Bemessungsstrom Rated current	2 A
Bemessungsstoßspannung Rated impulse voltage	2.5 kV
Polzahl Number of poles	3P + 2PE
Anschlussart Kind of termination	Lötanschluss Solder termination
Leiterquerschnitt Cross section area	Max. 0.75 mm <sup>2</sup> / min. 0.50 mm <sup>2</sup>
Kabeldurchmesser Values for cable clamp	Ø 6 mm ... Ø 8 mm
Temperaturbereich Temperature range	-25 °C ... +85 °C
Steckzyklen Operation cycles	10
Schutzart Degree of protection	IP 20 nach / acc. to IEC EN 60529
Verschmutzungsgrad Degree of pollution	2
Max. Einsatzhöhe über N.N. Max. altitude above sea level	4000 m / 13,120 ft nach / acc. to IEC EN 60664-1
Schrumpfschlauch über Pins 2/4/5 Heat shrink above pins 2/4/5	
Zertifiziert nach Certified according to	VDE-Reg.-No. B687 DIN EN 61984: 2009-11; EN 61984: 2009
Zugelassene Steckerleiste Approved plug connector	BN 126920

**Beim Anschluss eines Kabels sind die gültigen Sicherheitsvorschriften zu beachten!**  
**Please attend the valid safety rules for assembling!**

Konstruktionsänderungen vorbehalten  
Design is subject to change without notice

Diese Zeichnung ist unser Eigentum. Verwendung, Vervielfältigung,  
 Weitergabe der Zeichnungen oder des darin enthaltenen  
 Know-hows an Dritte nur mit unserer ausdrücklichen Genehmigung.

Maßangaben in mm Dimensions in mm		Projektion E: Projection E:		Maßstab: / Scale:	
Allgemeintoleranzen: DIN ISO 2768mH General tolerances:		Datum: 31.01.2011 Date:	Name: Frank Name:	Bezeichnung: Title: <b>Kabelkupplung cable socket 5-polig / 5 pole, 250 VAC</b>	
Index: Revision:	And.-Nr.: Issue-No.:	Erstellt: Creator:	Geprüft: Checked:	Zeichnungs-Nr.: Drawing-No.:	Format: Blatt: Sheet: 1 von: of: 1
Datum: Date:	Name: Name:	Spinner GmbH Ergießereistr. 33 D-80335 München			
D 01-1077203.12.2013	Hartmann	12.12.2013		<b>126919-0E</b>	<b>A4</b>
C 01-0907127.02.2013	Hupfauer				
B DIV.CORR01.02.2011	Frank				
A Startindex	31.01.2011	Frank			