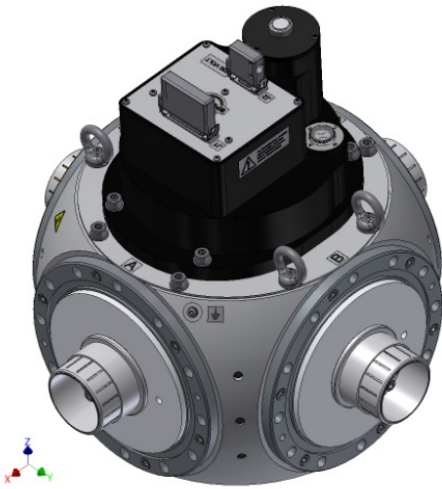


Coaxial Two Way Switch (DPDT) || BN 941989



Product manual: M36025

**Radio frequency characteristics**

Interface type (4 connections)	6 1/8" EIA according to EN 122150 (threaded flanges)			
Characteristic impedance	50 Ω			
Frequency range	1 MHz	10 MHz	100 to 230 MHz	230 to 800 MHz
VSWR, max.	1.06	1.06	1.06	1.08
Isolation, min.	75 dB	75 dB	75 dB	70 dB
Insertion loss, max.	0.03 dB			
Average power capability * at ambient temperature -10 to +45°C	1000 kW	350 kW	110 kW	60 kW
Peak voltage capability *	18.6 kV			

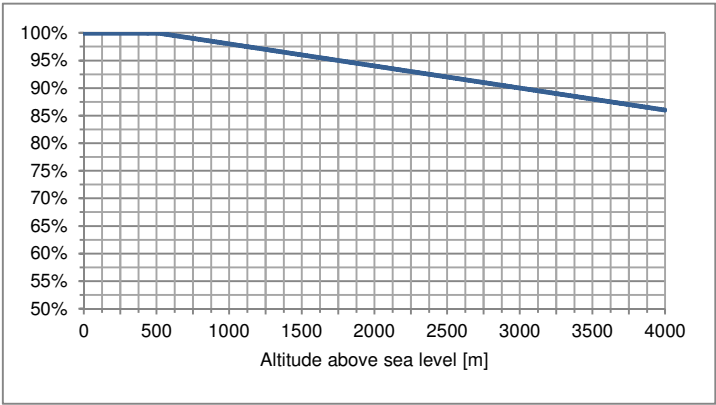
**Electrical and mechanical data**

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. ***	1.5 A
	Nominal fuse	The switch must be externally fused by time-delay, 2 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.	12 mA at control voltage 24 V DC
	Nominal fuse	The circuit must be externally fused with 0.5 A

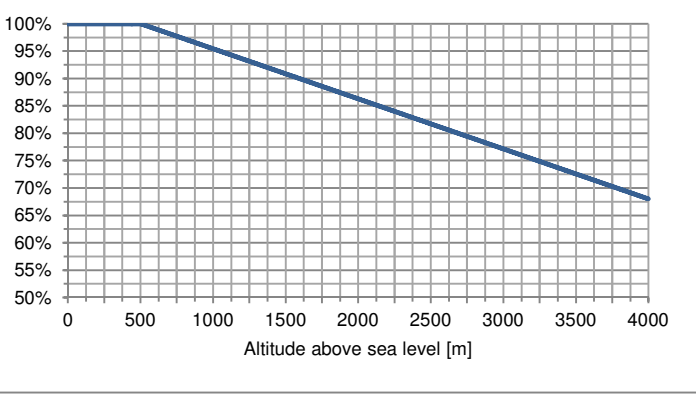
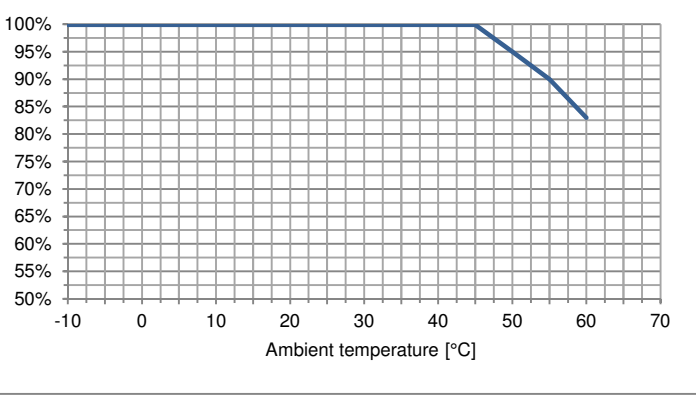
Coaxial Two Way Switch (DPDT) || BN 941989

Signal contacts Interlock contacts	Lead time typ.***	200 ms (the interlock/signal contacts open 200 ms before and close 200 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.***		1.2 s
Command hold time, min.		1.2 s (during this time, the voltage at control input must not change)
Switching frequency, max.		3 cycles per minute, max. 30 cycles per hour (6 operations per minute, max. 60 operations per hour)
Life, min.		250,000 cycles (500,000 operations)
Weight, approx.		38 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%
Altitude above sea level [m]	Percentage																				
0	100%																				
500	100%																				
1000	98%																				
1500	96%																				
2000	94%																				
2500	92%																				
3000	90%																				
3500	88%																				
4000	85%																				

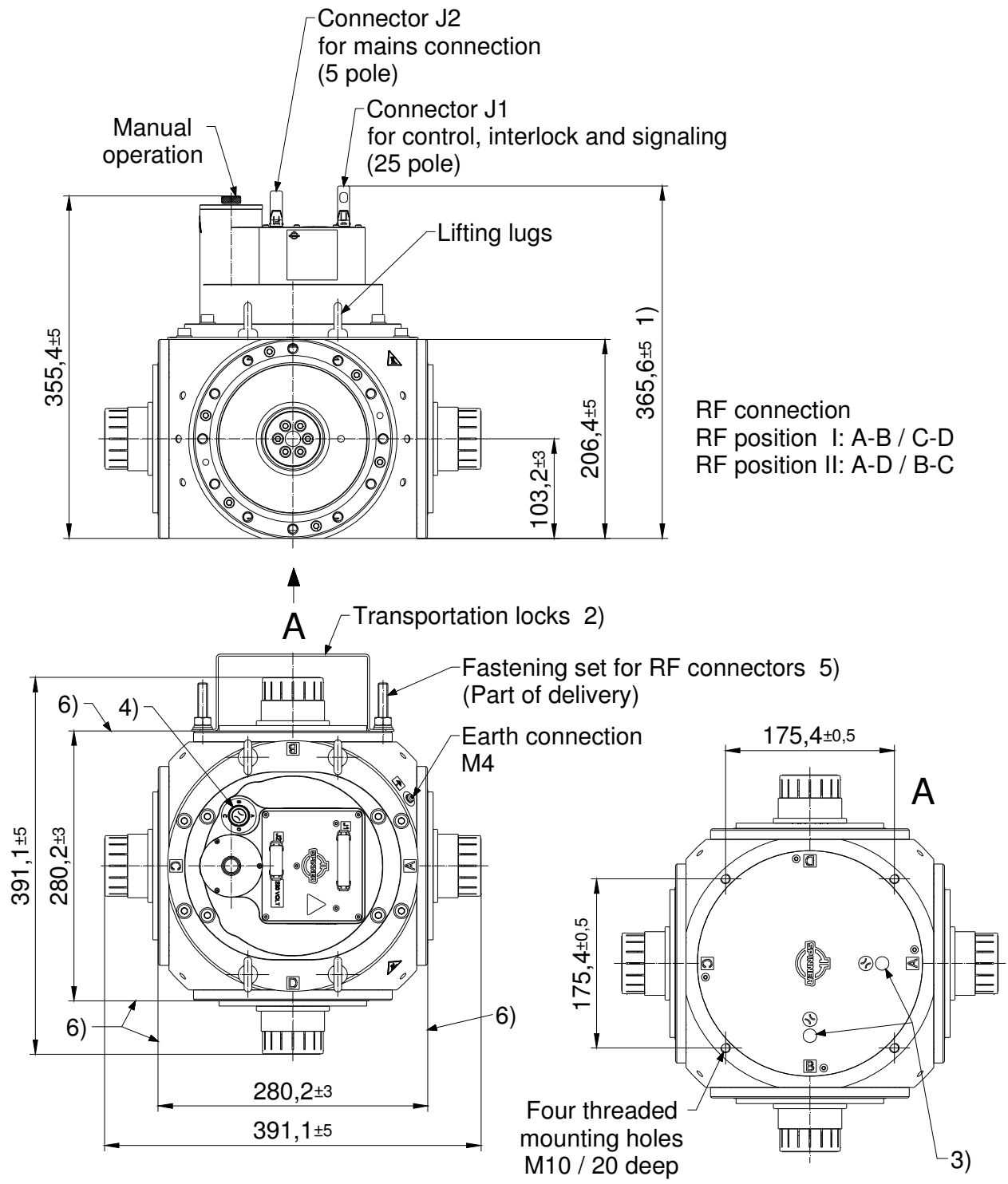
Coaxial Two Way Switch (DPDT) || BN 941989

<p>Derating of voltage with increasing altitude</p>	<p>The maximum voltage can be applied up to 500 m or 1600 ft above sea level unless noted otherwise in the data sheet. Above this height the voltage must be reduced as shown in the diagram.</p> 
<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> 
<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, 50 Hz*  
 \*\*\*\* *Extended temperature range on request*

Coaxial Two Way Switch (DPDT) || BN 941989

Outline (all dimensions in millimeters)



- 1) + 10 mm to disconnect the connectors
- 2) Only shown once, to remove before installation
- 3) Position indicator bottom side - current position is shown by white dot (marking)
- 4) Position indicator top side - current position is shown by pictogram
- 5) Altogether 48 (8 used for transportation locks)
- 6) Reference plane

# Coaxial Two Way Switch (DPDT) || BN 941989

## Circuit diagram

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

Signalkontakte  
Signal contacts

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

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

Motor-Schalter-Kontakte  
Motor circuit breaker

HF-Pos. II  
RF pos. II

HF-Pos. I  
RF pos. I

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

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  $\equiv$  normally closed  
NO  $\equiv$  normally opened  
Stellung, wenn Mikroschalter nicht gedrückt ist  
Position if microswitch is not pushed

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

Elektrische Steuerung  
Electrical control

Circuit diagram  
B17828-CD

Rechtslauf  
Right-handed rotation

Linkslauf  
Left-handed rotation

5-pol. Stecker  
5 pole connector  
BN 126920  
VDE Reg.-No. B687

5-pol. Stecker  
5 pole connector  
BN 126919  
VDE Reg.-No. B687

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

Achtung:  
Gerät ist extern mit 2 AT abzuschirmen!  
Attention:  
The switch must be externally fused by time-delay 2 A

Maßangaben in mm  
Dimensions in mm

DIN ISO  
General tolerances: 2768mm

Projektion E:  
Projection E:

Rezeichnung:  
Title:  
circuit diagram  
coaxial two way switch 187 to 253 V AC  
control voltage 8 to 31 V DC

Datum:  
Date:  
27.03.2012

Erstellt:  
Created:  
Frank

Geprüft:  
Checked:  
Hupauer

Zeichnungs-Nr.:  
Drawing-No.:  
B17827-CD

Blatt:  
Sheet:  
von:  
of:  
A3

Spinners GmbH  
Firmensitz: 33  
D-80335 München

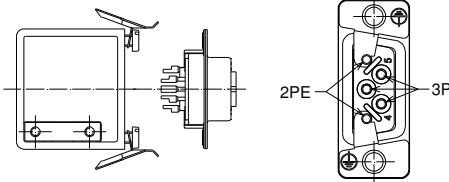
Coaxial Two Way Switch (DPDT) || BN 941989

Cable socket (126919-0E, Issue D)

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know-how contained therein requires our express consent.

Anleitung für den Kabelanschluss  
Instructions for cable connection

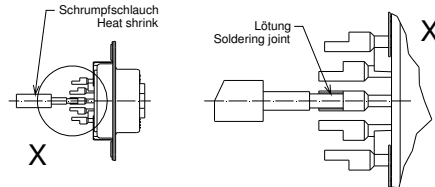
- Entfernen des Schutzgehäuses  
Removing of the protective housing



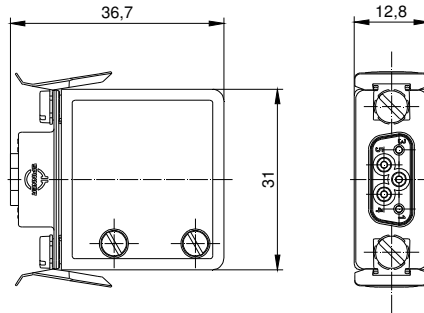
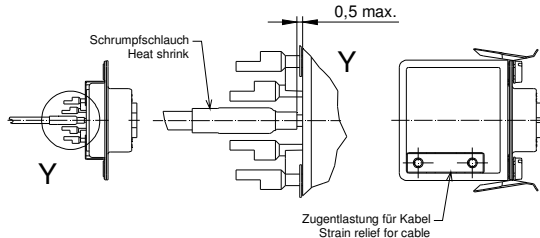
- Absetzen der Kabelitzen  
Trimming of the cable strands



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



- Aufschumpfen der drei Schrumpfschläuche (PIN 2/4/5)  
4.a Shrinking three heat shrinks (pins 2/4/5)
- 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

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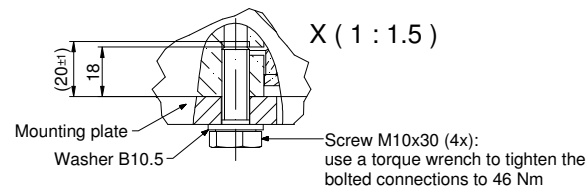
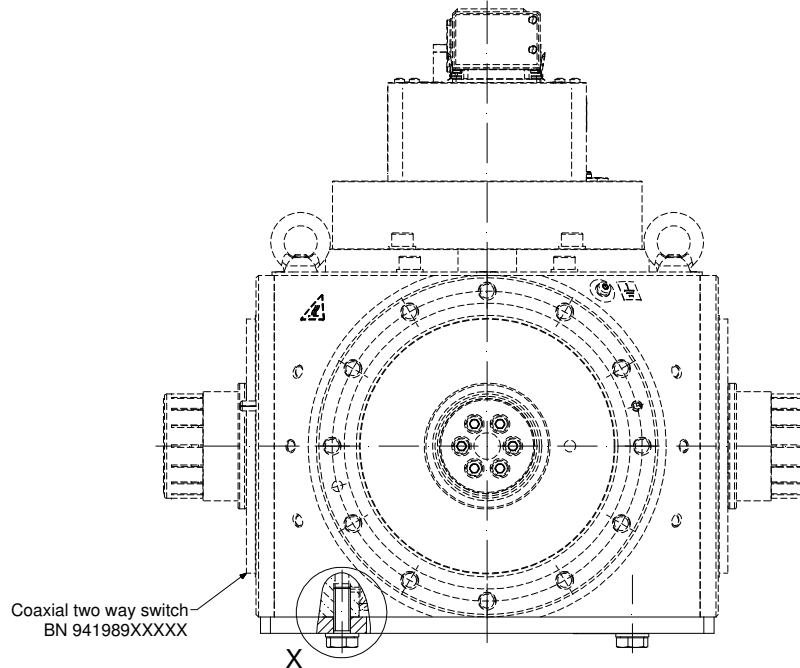
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Allgemeintoleranzen: General tolerances:	DIN ISO 2768mH	Datum: Date:	Name: Name:
Index: Revision:	And-Nr.: Issue-No.:	Erstellt: Creator:	Name: Name:
Datum: Date:	Name: Name:	Geprüft: Checked:	
D 01-1077203.12.2013Hartmann		31.01.2011	Frank
C 01-0907127.02.2013Hupfauer		12.12.2013	Hartmann
B DIV_CORP01.02.2011Frank			
A Startindex31.01.2011Frank			
Spinner GmbH Erzgiesserei Str. 33 D-80335 München		Bezeichnung: Title:	
		Kabelkupplung cable socket	
		5-polig / 5 pole, 250 VAC	
		Zeichnungs-Nr.: Drawing-No.:	Format: Format:
		126919-0E	A4
			Blatt: Sheet: 1
			von: of: 1

Coaxial Two Way Switch (DPDT) || BN 941989

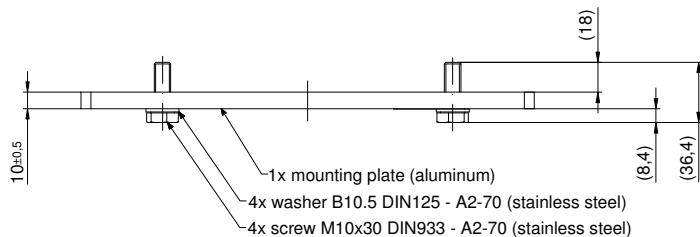
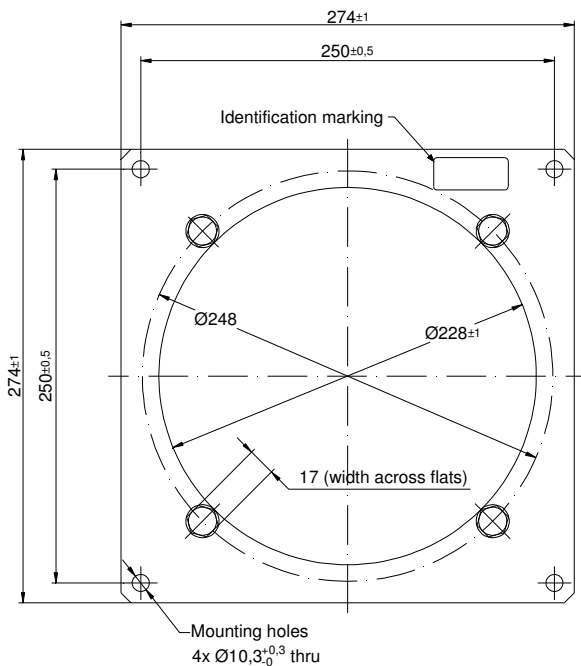
Accessories (optional)

Installation kit BN 941989C3000

Installation instructions for BN 941989C3000-installation kit:



Installation kit BN 941989C3000:



Do not use the installation kit to support additional mechanical loads.

Maßangaben in mm Dimensions in mm		Projektion E: Projection E:		Maßstab: / Scale: 1 : 2.5	
Allgemeintoleranzen: General tolerances: DIN ISO 2768mH		Datum: Date: 14.02.2019	Name: Name: Hupfauer	Bezeichnung: Title: installation kit for coaxial two way switch (DPDT) 6 1/8" (50 Ohm)	
Erstellt: Creator: Hupfauer	Datum: Date: 18.02.2019	Geprüft: Checked: Hupfauer	Zeichnungs-Nr.: Drawing-No.: 941989C3000-0E		
A Startindex 4.02.2019 Hupfauer			Format: Format: A3	Blatt: Sheet: 1 von: of: 1	

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