

Connectors

Series NF07, NF10

Circular Audio
Miniature Connectors

Catalogue A58.en





Connectors for audio technology: Series NF07 and NF10

Our well-proven 7- and 10 pole circular audio miniature connectors NF07 and NF10 are especially designed for communication engineering. They provide high reliability under extreme ambient conditions. The

present catalogue describes the watertight connectors with a bayonet groove, covering a wide temperature range. The modular design provides many combinations allowing to suit your particular requirements.

Features Series NF

Our 7- and 10 pole circular audio miniature connectors are watertight and locked by a bayonet coupling. Hard gold plated spring-loaded contacts with self-cleaning faces ensure a continuously low contact resistance.

The following series are available:

Series	Description
NF07 series: 7 pole standard series	Page 7
NF07 /S series: 7 pole series with enhanced shielding	Page 16
NF10 series: 7 pole series with enhanced shielding	Page 23

Important features of our circular audio miniature connectors series NF07 and NF10:

General application characteristics:

- Reliability under extreme ambient conditions
- High protection degree and water-tightness even when unmated
- Application under a wide temperature range.
- Stockable for 10 years in Schaltbau original packing

Electrical features:

- Scoop proof: The design prevents a short-circuit between plug shells and receptacle contacts while mating.
- Spring-loaded contacts: hard gold plated with self-cleaning faces.
 High shock and vibration resistance and a very low contact resistance allow high reliability even at low voltages and currents.
- EMP Shielding: Series NF10 and the shielded NF07 show good attenuation characteristics with regard to electromagnetic influences, HF influences and pulse repetition frequencies.
- Contact termination: Available as follows::
 - Solder cup for leads
 - Solder pin 3.5 mm for PCB terminal
 - Solder pin 8.0 mm for PCB terminal



Audio connectors to military specification (Photo: SEL Defence Systems)

Mechanical features:

 Shell material: All shells consist of stainless steel and non magnetic materials. The receptacle shells and the plug shells are black anodised. The finish of the backshells is olive drab or black.

The modular design of the connector systems allows many combinations.

The following connector backshells are available:

- for heatshrink boots
- for cable sleeves
- for screen termination
- for potting
- Polarization: The NF series feature a variety of connector orientations. NF10 series comes with an option of 5 bayonet latch positions, whereas NF07 series connectors are available with 4 max. A marking colour corresponds to each of the different insert positions.

Optional customized filters:

• Planar technique: C-filter

• **Modular technique:** C-filter, π-filter

• **Tubular technique:** C-filter, π-filter, RFI-filter



Specifications Series NF

Series			NF07	NF07 /S	NF10
Number of conta	icts		7	7	10
Contact arrangement Plug: Front view Receptacle: Rear view					
Contact identific Plug: Receptacle:	ation Front view Rear view		B A F C B E	B A F C B E	B ^A G C ^H J ^K F D E
Rated voltage			50 V	50 V	50 V
Connector orient	tations		3	4	5
Rated current:	l min. I max.		6 μA 2.5 A *1	6 μA 2.5 A *1	6 μA 2.5 A *¹
Contact resistance	ce		approx. 5 mΩ *2	approx. 5 mΩ *2	approx. 5 mΩ *2
Temperature ran	ge		-55°C +100°C (10 sec. max. up to +150°C)	-55°C +100°C (10 sec. max. up to +150°C)	-55°C +100°C (10 sec. max. up to +150°C)
Insulation resista	nce		≥ 5,000 MΩ	≥ 5,000 MΩ	≥ 5,000 MΩ
Test voltage			500 V _{rms} 50 Hz	500 V _{rms} 50 Hz	500 V _{rms} 50 Hz
EMP-shielding			approx. 60 dB 70 dB *3		70 dB
Sealing mated and unn	nated		IP68 *⁴ 0.4 bar, 2 hours at 25°C	IP68 *⁴ 0.4 bar, 2 hours at 25°C	IP68 *4 0.4 bar, 2 hours at 25°C
Mechanical life			5,000 couplings	5,000 couplings	5,000 couplings
Shell: Plug: Receptacle:	Materials Finish Colours Materials		Stainless steel Cr 3 ⁺² Black Stainless steel	Aluminium alloy / Stainless steel Ni 3 ⁺² Cd 6 ⁺² cF / Cr 3 ⁺² Olive (RAL6015) / Black Stainless,	Aluminium alloy / Stainless steel Ni 3+2Cd 6+2 cF / Cr 3+2 Olive (RAL6015) / Black Stainless, antimagnetic steel
	Finish Colours		Cr 3 ⁺² Black	antimagnetic steel Cr 3 ⁺² Black	Cr 3 ⁺² Black
Contact inserts			Thermoplastic / Duroplast	Thermoplastic / Duroplast	Thermoplastic / Duroplast
Sealing elements	5		Silicone elastomer / Fluorosilicone elastomer	Silicone elastomer / Fluorosilicone elastomer	Silicone elastomer / Fluorosilicone elastomer
Contact type:	Plug Receptacle Material:	Crimp-type copper wrought alloy	Rigid contacts Spring contacts •	Rigid contacts Spring contacts •	Rigid contacts Spring contacts •
	Finish:	Layer in micrometer	Gold Cu: 1.0 / Ni: 2.0 / Au: 5±1	Gold Cu: 1.0 / Ni: 2.0 / Au: 5±1	Gold Cu: 1.0 / Ni: 2.0 / Au: 5±1 § SCHALTBAU

^{*1} for any two contacts

Competence of Schaltbau

Standards

Series NF

At the beginning of the seventies Schaltbau developed the 7 pole connector NF07. It was standardized as VG 95351.

In 1982 the procurement authorities of the German armed forces (BWB) placed an order to develop a 10 pole connector. It was standardized as VG 96934.

Schaltbau has been continuously enhancing the series NF07 and NF10. Presently approx. 22 type variants of NF07 and 34 variants of NF10 are available (not including orientations).

Variants with attenuation values exceeding 80dB and completely antimagnetic types are being manufactured.

Series NF 07:

- 7 pole standard connector:
 VG95351 meets requirements regarding test and approval.
- 7 pole connector, suitable for shielding: Test according to VG96934

eries NF 10:

10 pole connector, suitable for shielding:
 VG96934 meets requirements regarding test and approval.



Note:

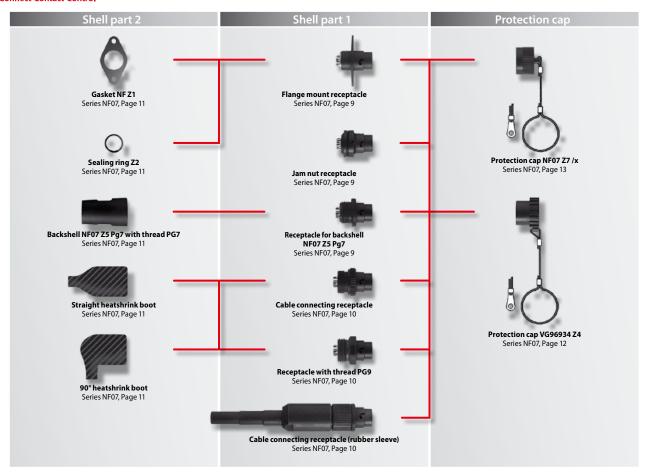
According to IEC 61984 connectors are devices which in normal use must not be coupled or uncoupled when live or under load.

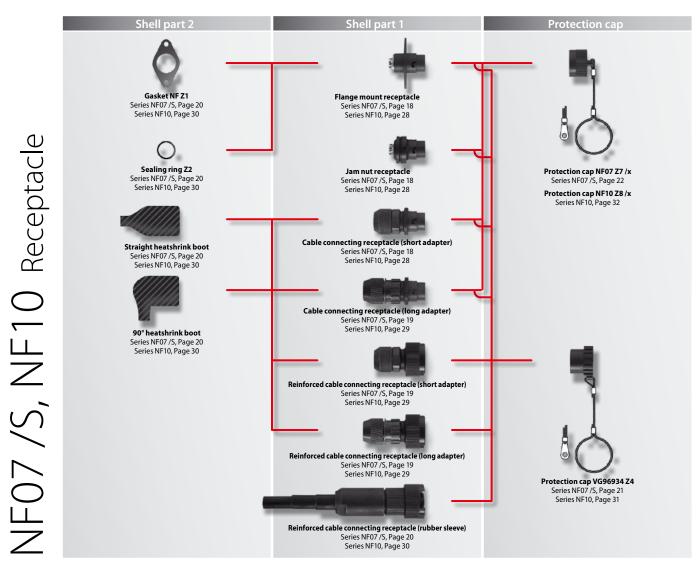
^{*2} required: $\leq 20 \text{ m}\Omega \text{ (VG96934 / VG95351)}$

^{*3} Do not intermate connectors NF07 /S series with enhanced shielding with NF07 series connectors.

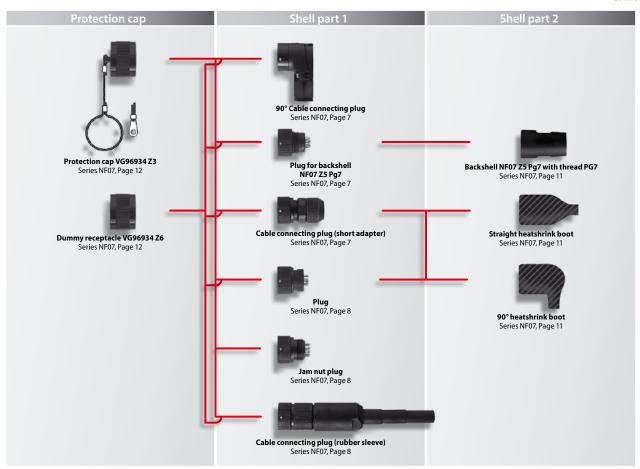
^{*4} according to VG95319-2, Test-No. 5.9.2.

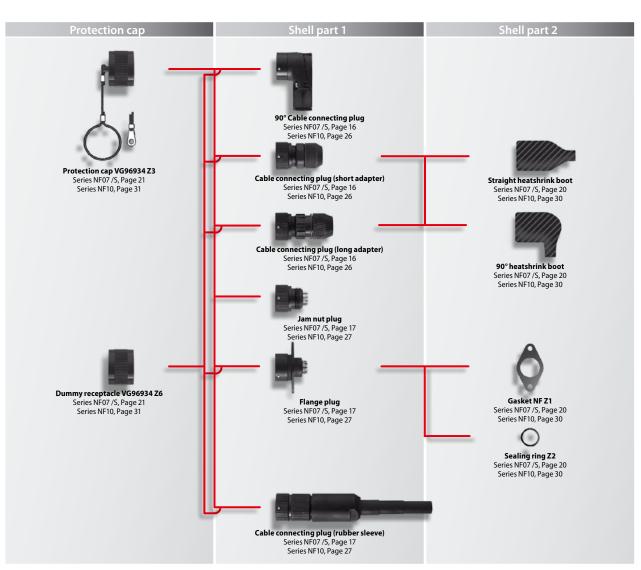






NF07 Plug







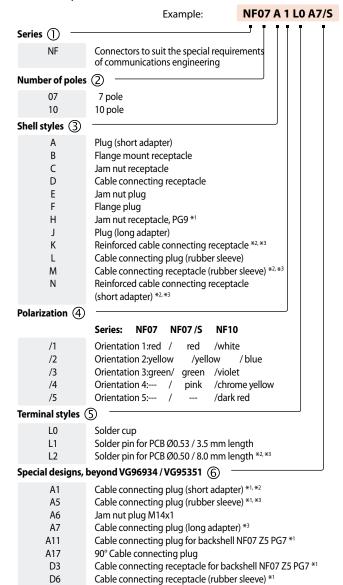
Ordering information

Series NF07

Our NF connector system has a modular structure. Consequently, there are many variation possibilities. You will find the exact ordering code for all variants listed in a chart relating to the corresponding device outline.

We make a difference between an ordering code for our NF series connectors and a separate one for accessories.

Series NF07, NF07 /S and NF10



_	D	dummy receptacles
•	Protection cans and	I Alimmy recentacies

		E	xan	nple:		NF07 Z7 /1
Protection caps/dummy receptacles ①						
VG96934 Z3 VG96934 Z4 VG96934 Z6 NF07 Z7 NF10 Z8	Protection cap (VG96934) Protection cap (VG96934) Dummy receptacle (VG96934) NF07: Protection cap for polarization NF10: Protection cap for polarization					
Polarization ②						
	Series	NF07		NF07/S		NF10
/1 /2 /3 /4 /5	Orientation 1: Orientation 2: Orientation 3: Orientation 4: Orientation 5:	red yellow green 	/ / / /	red yellow green pink 	/ / / d /	white blue violet chrome yellow dark red

Backshells

		Example:	NF07 Z5 Pg7
Backshell (1)			
NF07 Z5 Pg7 203W112-30 224K012-30	Backshell, PG7 Straight heatshrink boot* 90° heatshrink boot*		

^{*} Order direct from Raychem or other OEMs

Seals

		Example:	Z 1
Seals (1)			
Z1 Z2	Gasket O-Ring		

Tools

	Example:	Z16	
Tool (1)			
1001			
716	Assembly tool for iam nut recentacle NF07	NF07 /S	NF1



*1 Series NF07 only

D7

/S

- *2 Series NF07/S only
- *3 Series NF10 only
- *4 Unlike the NF07 series, the NF07 /S and NF10 series connectors feature enhanced shielding. The extra parameter /S is not necessary for the NF10 series.

Enhanced shielding, NF07 /S only *4

Reinforced cable connecting receptacle (long adapter) *2, *3



Note:

Presented in this catalogue are only stock items which can be supplied in short delivery time. For some connectors minimum order quantities may apply. Please contact us for terms and conditions.

Special variants:

If you need a special variant feel free to contact us. Maybe the type of connector you are looking for is among our many special designs. If not, we can also supply customized designs. In this case, however, minimum order quantities apply.

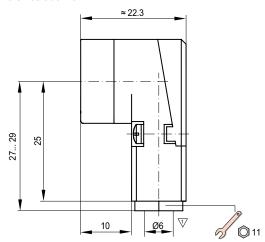


90° cable connecting plug

Series NF07

Shell part 1

Device outline



Ordering code

Example:



NF	07	Α	1	L0	A17
•	•	•	•	•	•
1	2	3	4	(5)	6
NF	07	A A A	1 2 3	L0 L0 L0	A17 A17 A17

Note:
Backshell NF07 Z5 PG7 on page 11
Terminal styles on page 13

Plug for backshell NF07 Z5 Pg7

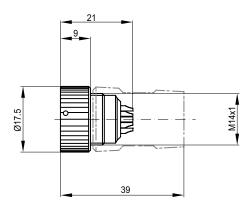
Series NF07

Shell part 1

A11

LO

Device outline



Ordering code

Example: See also ordering information on page 6



2	3	4	(5)	6
	Α	1	LO	A11
07	A	2	LO	A11
	Α	3	L0	A11

NF

1

NF

NF

1

2

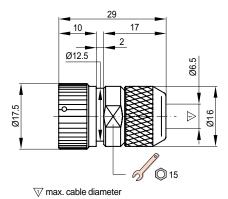
07

Note:
Backshell NF07 Z5 PG7 on page 11
Terminal styles on page 13

Cable connecting plug (short adapter)

Series NF07

Device outline



Ordering code

Example: See also ordering information on page 6

See also ordering information on page 6

			Shel	l part 1
07	Α	1	L0	A 1
•	•	•	•	•

4

(5)

6

NF 07 A 1 L0 A1 A 2 L0 A1 A 3 L0 A1

3

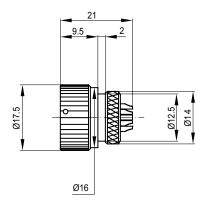
Note:
Backshell NF07 Z5 PG7 on page 11
Terminal styles on page 13



Plug for heatshrink boot

Series NF07

Device outline



Ordering code

Example: See also ordering information on page 6



				Shel	l part 1
NF	07	Α	1	L0	*2
•	•	•	•	•	•
1	2	3	4	(5)	6
NF	07	A A A	1 2 3	L0 L0 L0	*2 *2 *2

Heatshrink boots on page 11 Terminal styles on page 13

*2 Customized designs upon request

Jam nut plug M14x1

Series NF07

Shell part 1

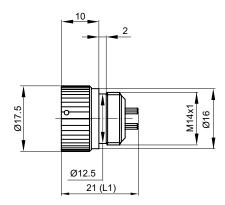
 $A6^2$

6

L0

(5)

Device outline



Ordering code

Example: See also ordering information on page 6



L0 L0 A6 1 2 3 А6 L0

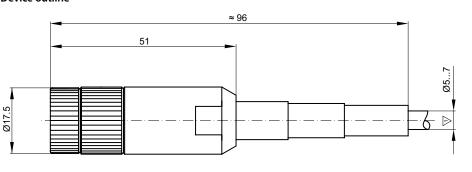
4

Terminal styles on page 13 *2 Customized designs upon request

Cable connecting plug (rubber sleeve)

Series NF07

Device outline



Ordering code

Shell part 1

NF

1

NF

07

2

See also ordering information on page 6

NF	07	Α	1	L0	A 5
•	•	•	•	•	•
1	2	3	4	(5)	6
		Α	1	L0	A5
NF	07	Α	2	L0	A5
		Α	3	L0	A5



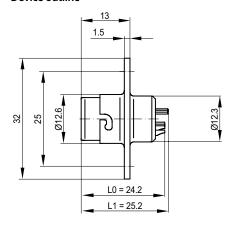
Note: Terminal styles on page 13



Flange mount receptacle

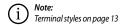
Series NF07

Device outline



Ordering code

Shell part 1 NF ___*2 Example: 07 L0 See also ordering information on page 6 1 2 3 4 (5) 6 L0 В NF 07 В 2 L0 L0 L1 NF 07 L1

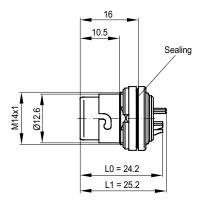


Jam nut receptacle

Series NF07

Shell part 1

Device outline



Ordering code

Example:

See also ordering information on page 6

NF 07 C LO 1 2 3 4 (5) 6 C C L0 NF 2 L0 3 L0 C C L1 NF 07 2 L1 L1

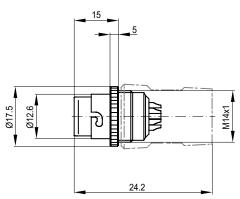
Terminal styles on page 13

Receptacle for backshell NF07 Z5 Pg7

Series NF07

Shell part 1

Device outline



Ordering code

Example: See also ordering information on page 6

NF 07 LO D3 1 2 3 (5) 4 6 D3 L0 D D 2 NF 07 L0 D3 L0 D3

Note: Backshell NF07 Z5 Pg7 on page 11 Terminal styles on page 13

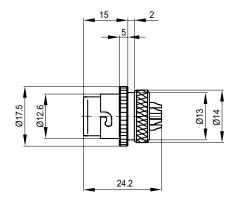


Cable connecting receptacle for heatshrink boot

Series NF07

Shell part 1

Device outline



Ordering code

Example: See also ordering information on page 6



NF	07	D	1	L0	*2
•	•	•	•	•	•
1	2	3	4	(5)	6
		D	1	LO	*2
NF	07	D	2	L0	*2
		D	3	LO	*2

Heatshrink boots on page 11 Terminal styles on page 13

*2 Customized designs upon request

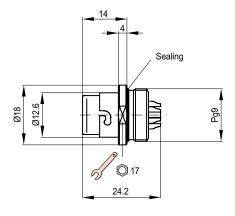
Jam nut receptacle with thread PG9

Series NF07

Shell part 1 ___*2

LO

Device outline



Ordering code

Example: See also ordering information on page 6

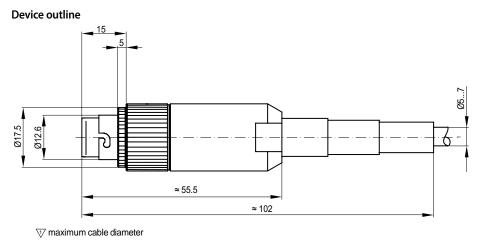


1	2	3	4	(5)	6
		Н	1	LO	*2
NF	07	H	2	L0 L0	*2 *2

Terminal styles on page 13 *2 Customized designs upon request

Cable connecting receptacle (rubber sleeve)

Series NF07



Ordering code

NF

07

Shell part 1

See also ordering information on page 6

NF	07	D	1	L0	D6
•	•	•	•	•	•
1	2	3	4	(5)	6
NF	07	D D D	1 2 3	L0 L0 L0	D6 D6 D6



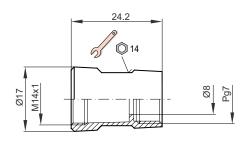
Note: Terminal styles on page 13



Backshell NF07 Z5 Pg7 with thread PG7

Series NF07

Device outline



Ordering code

Shell part 1

Example:

See also ordering information on page 6

NF07 Z5 Pg7

1



Backshell with thread PG7

NF07 Z5 Pg7



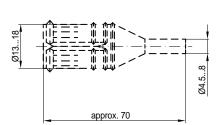
For use with commercially available screw coupling built to DIN 46320

Heatshrink boots

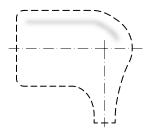
Series NF07

Device outline

Heatshrink boot, straight



Heatshrink boot, 90°



Ordering code Accessories / Shell part 2

Example:

See also ordering information on page 6

203W 112-30



Heatshrink boot, straight 203W112-30 *

Heatshrink boot, 90° 222K 142-15 *

Note:

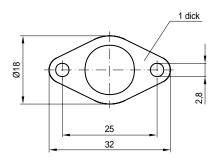
* Order direct from Raychem or other OEMs

Seals NF Z1 and NF Z2

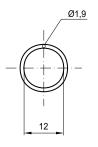
Series NF07

Device outline

Gasket NF Z1 (Flange seal)



Sealing ring NF Z2 (O-ring)



Ordering code

Accessories / Shell part 2

Example:

See also ordering information on page 6

NF Z1



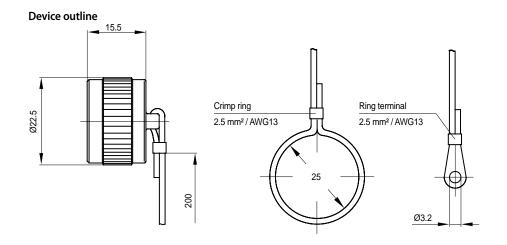
Gasket NF Z1

Sealing ring NF Z2



Protection cap VG96934 Z3

Series NF07



Ordering code Accessories/Protection cap Example:

See also ordering information on page 6

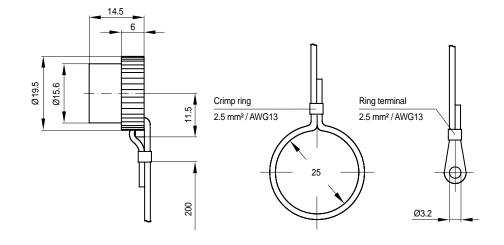


Note:
It is possible to fit loops or ring terminals (both included)

Protection cap VG96934 Z4 (rubber)

Series NF07

Device outline



Ordering code Accessories/Protection cap

Example:

See also ordering information on page 6

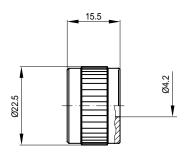


Note:
It is possible to fit loops or ring terminals (both included)

Dummy receptacle VG96934 Z6

Series NF07

Device outline



Ordering code Accessories/Protection cap

Example:

See also ordering information on page 6

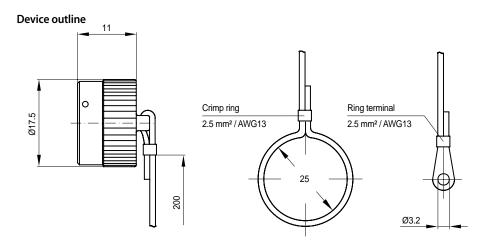


Note:
Dummy receptacle to be mounted onto the case of a device
For receiving a free plug cable



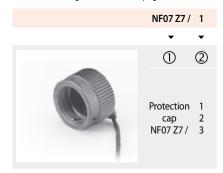
Protection cap for polarization NF07 Z7/x

Series NF07



Ordering code Accessories/Protection cap Example:

See also ordering information on page 6



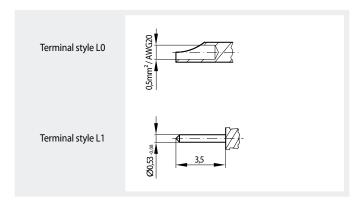
Note:
It is possible to fit loops or ring terminals (both included)

Terminal styles, Assembly tool Z16

Series NF07

Accessories

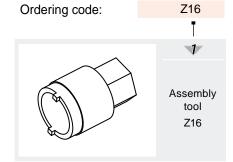
Terminal styles



Note:
Terminals must not be subjected to force or stress

Assembly tool Z16

Assembly tool for jam nut receptacles NF07 C x xx



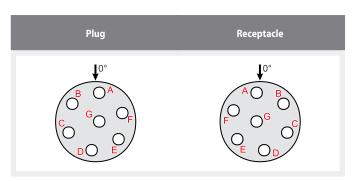
(i) /

Note: Assembly tool for jam nut receptacles NF07 C x xx Width across flats SW13, use with torque spanner,

Contact arrangement, Polarization

Series NF07

Contact arrangement



Note:
Planforms seen from connector face

Polarization

Bayonet latch positions	Po	olarization	NF07 Series	
T 0°	Orientation	α1	α2	Colour
90°	1	90°	120°	red
	2	105°	130°	yellow
ά2 α1	3	110°	135°	green

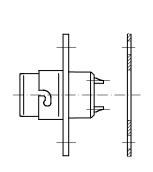


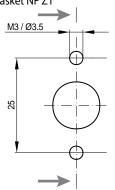
Standard mounting borings

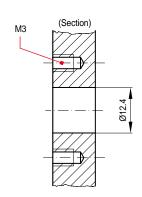
Series NF07

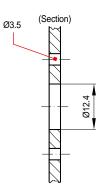
Flange mount receptacles

• Panel cutout for flange mount receptacles with gasket NF Z1

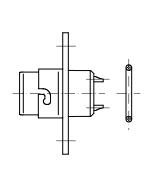


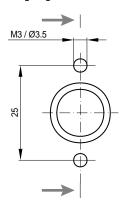


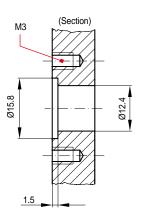


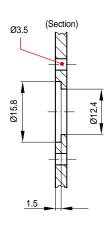


Panel cutout for flange mount receptacles with sealing ring NF Z2



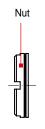






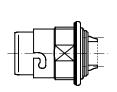
Jam nut receptacles

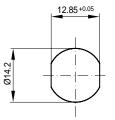
Panel cutout for jam nut receptacles









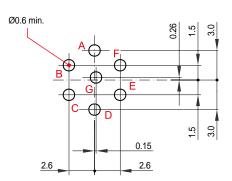


(i)

Note:Use mounting tool VG96934 Z10; Torque 2 Nm max.

PCB terminal

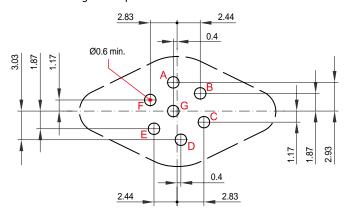
• Panel drilling for plugs



(i) Note:

These mounting borings can also be used for NF07/S Series receptacles

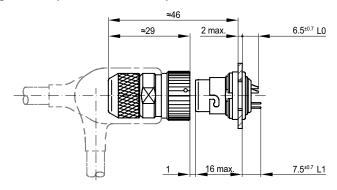
• Panel drilling for receptacles



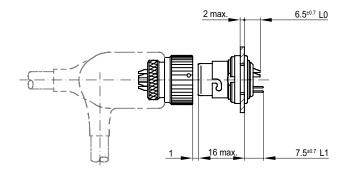
Standard assembly and installation dimensions

Series NF07

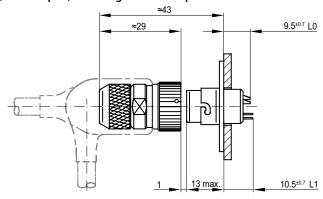
• Cable connecting plug (short adapter) <=> Jam nut receptacle

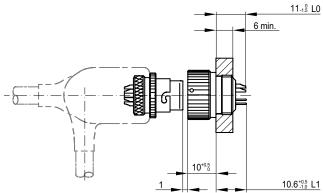


• Plug for heatshrink boot <>> Jam nut receptacle



• Cable connecting plug (short adapter) <=> Flange mount receptacle





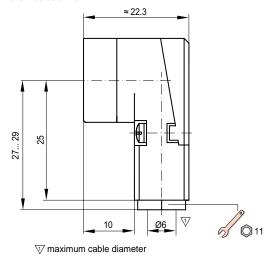


90° cable connecting plug

Series NF07/S

Shell part 1





Ordering code

Example: See also ordering information on page 6



NF	07	Α	1	LO	A17/S
•	•	•	•	•	•
1	2	3	4	(5)	6
		A A	1 2	L0 L0	A17/S A17/S
NF	07	Α	3	LO	A17/S
		Α	4	L0	A17/S

Terminal styles on page 22

Cable connecting plug (short adapter)

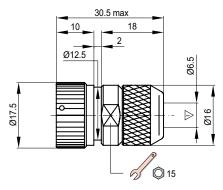
Series NF07/S

Shell part 1

A1/S

L0

Device outline



√ maximum cable diameter

Ordering code

Example: See also ordering information on page 6



1 2 3 4 (5) 6 L0 A1/S 2 3 4 L0 A1/S NF 07 L0 A1/S Α L0 A1/S

NF

NF

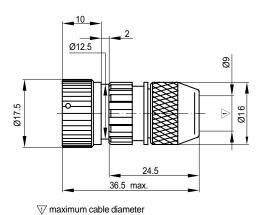
07

Terminal styles on page 22

Cable connecting plug (long adapter)

Series NF07/S

Device outline



Ordering code

Example:



Shell part 1 L0 /S 07

2 (5) 1 3 4 6 L0 /S 2 L0 /S NF 07 /S /S Α 3 L0 L0

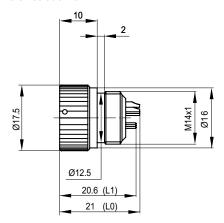
Note: Terminal styles on page 22



Shell part 1

Jam nut plug Series NF07 /S

Device outline



Ordering code

Example: See also ordering information on page 6	NF ▼	07 ▼	E ▼	1	L0 ▼	/S •
	1	2	3	4	(5)	6
(E.)	NF	07	E E E	1 2 3 4	L0 L0 L0 L0	/S /S /S /S
	NF	07	E E E	1 2 3 4	L1 L1 L1 L1	/S /S /S /S

Note:
Terminal styles on page 22

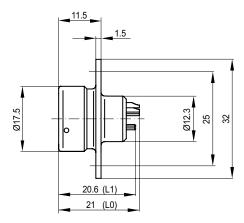
Flange plug

Series NF07 /S

Shell part 1

L0 /S

Device outline



Ordering code

Example: See also ordering information on page 6



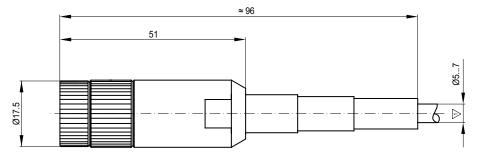
•	•	•	•	•	•
1	2	3	4	(5)	6
NF	07	F F F	1 2 3 4	L0 L0 L0 L0	/S /S /S /S
NF	07	F F F	1 2 3 4	L1 L1 L1 L1	/S /S /S /S

Note: Terminal styles on page 22

Cable connecting plug (rubber sleeve)

Series NF07/S

Device outline



Ordering code

Shell part 1

Example:

NF

07

See also ordering information on page 6

NF	07	L	1	L0	/S
•	•	•	•	•	•
1	2	3	4	(5)	6
NF	07	L L L	1 2 3 4	LO LO LO	/S /S /S /S

(i) Note:

Terminal styles on page 22

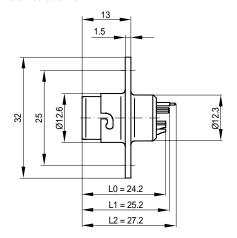


Flange mount receptacle

Series NF07/S

Shell part 1

Device outline



Ordering code

/S NF 07 В L0 Example: See also ordering information on page 6 1 2 3 4 (5) 6 В L0 /S В L0 /S 2 NF 07 /S В 3 L0 /S В L0 L1 /S В L1 /S /S /S NF 07 В 3 L1 В 4 L1 В L2 /S /S /S /S L2 L2 В 2 NF 07 В L2



Note: Terminal styles on page 22

Jam nut receptacle

Series NF07/S

Shell part 1

/S

6

/S

/S

/S /S

/S

/S

/S

/S

/S

/S /S

/S

L2

L2

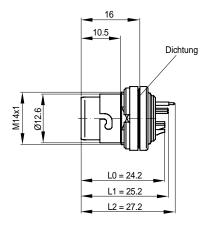
L2

L2

2

3 4

Device outline



Ordering code

NF c 07 L0 Example: See also ordering information on page 6 2 (5) 1 3 4 C L0 L0 NF 07 C 3 L0 C L0 C L1 C L1 NF 07 3 L1 Ċ L1

NF

07



Terminal styles on page 22

Cable connecting receptacle (short adapter)

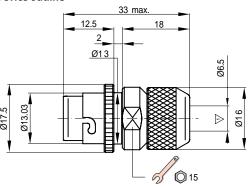
Series NF07/S

Shell part 1

/S

6

Device outline



maximum cable diameter

Ordering code

Example: See also ordering information on page 6



NF	07	D	1	L0	
•	•	•	•	•	
①	2	3	4	(5)	

C

C





Note:

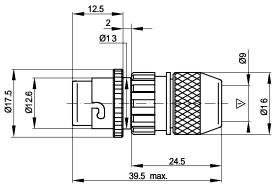
Terminal styles on page 22



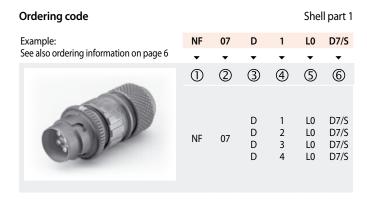
Cable connecting receptacle (long adapter)

Series NF07 /S

Device outline



√ maximum	cable	diameter



NF

07

Note:
Terminal styles on page 22

Reinforced cable connecting receptacle (short adapter)

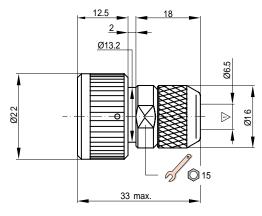
Series NF07/S

LO

Shell part 1

/S

Device outline



Ordering code

Example: See also ordering information on page 6



\odot	6	9	4	9	•
NF	07	N N N	1 2 3 4	LO LO LO	/S /S /S /S

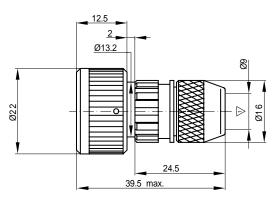
Note:
Terminal styles on page 22

Reinforced cable connecting receptacle (long adapter)

Series NF07 /S

Shell part 1

Device outline



Ordering code

Example: See also ordering information on page 6

	NF	07	K	1	L0	/S
6	•	•	•	•	•	•
	1	2	3	4	(5)	6
	NF	07	K K K	1 2 3 4	LO LO LO	/S /S /S

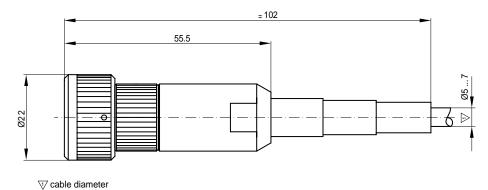
Note:
Terminal styles on page 22



Reinforced cable connecting receptacle (rubber sleeve)

Series NF07/S

Device outline



Ordering code

Shell part 1

Example:

See also ordering information on page 6

NF	07	M	1	L0	*2
•	•	•	•	•	•
1	2	3	4	(5)	6
NF	07	M M M	1 2 3 4	LO LO LO	*2 *2 *2 *2



Note:

Terminal styles on page 32

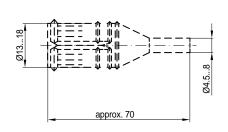
*2 Customized designs upon request

Heatshrink boots

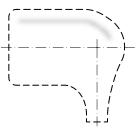
Series NF07/S

Device outline

Heatshrink boot, straight



Heatshrink boot, 90°



Ordering code

Accessories / Shell part 2

Example:

See also ordering information on page 6

203W 112-30 1 Heatshrink boot, straight 203W112-30 * Heatshrink boot, 90° 222K 142-15 *

Note:

* Order direct from Raychem or other OEMs

Seals NF Z1 and NF Z2

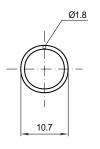
Series NF07/S

Device outline

(Flange seal) 1 thick Ø18 25

Gasket NF Z1

Sealing ring NF Z2 (O-ring)

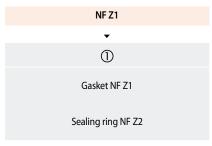


Ordering code

Accessories / Shell part 2

Example:

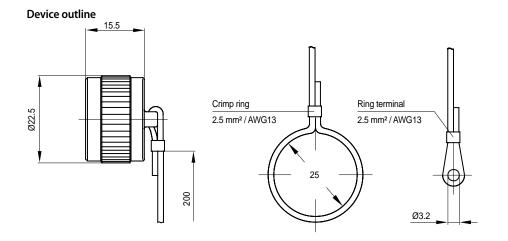
See also ordering information on page 6





Protection cap VG96934 Z3

Series NF07 /S



Ordering code Accessories/Protection cap

See also ordering information on page 6

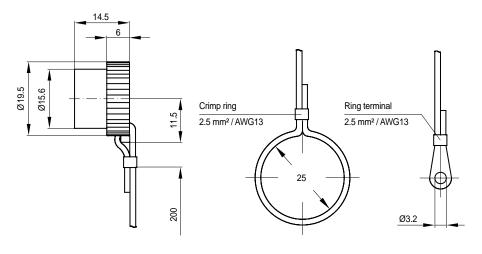


Note:
It is possible to fit loops or ring terminals (both included)

Protection cap VG96934 Z4 (rubber)

Series NF07 /S

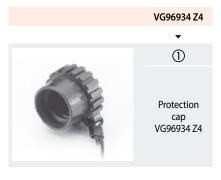
Device outline



Ordering code Accessories/Protection cap

Example:

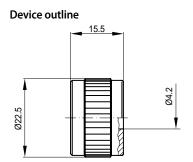
See also ordering information on page 6



Note:
It is possible to fit loops or ring terminals (both included)

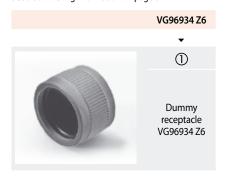
Dummy receptacle VG96934 Z6

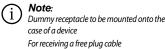
Series NF07 /S



Ordering code Accessories/Protection cap Example:

See also ordering information on page 6

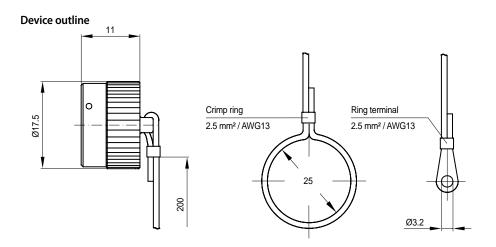






Protection cap for polarization NF07 Z7/x

Series NF07/S



Ordering code Accessories/Protection cap Example:

See also ordering information on page 6



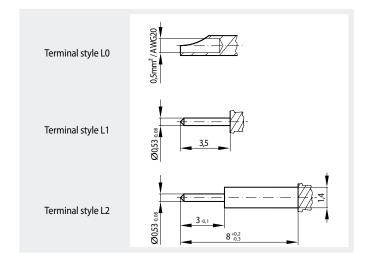
It is possible to fit loops or ring terminals (both included)

Terminal styles, Assembly tool Z16

Series NF07/S

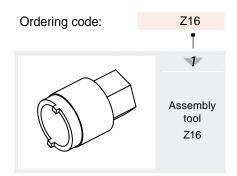
Accessories

Terminal styles



Assembly tool Z16

Assembly tool for jam nut receptacles NF07 C x xx / S



Note:Assembly tool for jam nut receptacles NF07 C x xx/S Width across flats SW13, use with torque spanner,

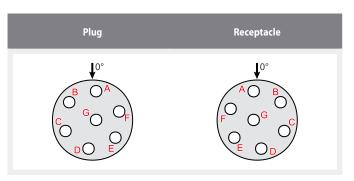


Terminals must not be subjected to force or stress.

Contact arrangement, Polarization

Series NF07/S

Contact arrangement



Polarization

Bayonet latch positions	Polarization NF07/5 Series				
1 0°	Orientation	α1	α2	Colour	
90°	1	90°	120°	red	
	2	105°	130°	yellow	
α_2 α_1	3	110°	135°	green	
	4	100°	165°	pink	



Note:

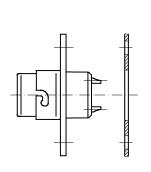
Planforms seen from connector face

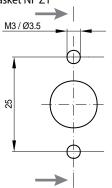


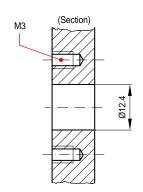
Mounting borings Series NF07 /S

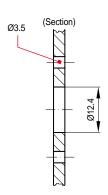
Flange mount receptacles

• Panel cutout for flange mount receptacles with gasket NF Z1

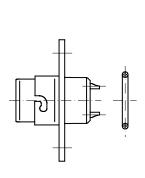


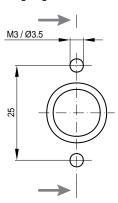


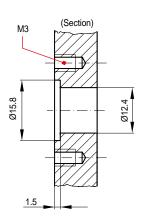


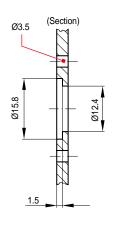


Panel cutout for flange mount receptacles with sealing ring NF Z2



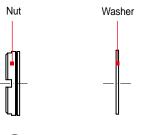


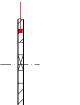




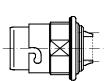
Jam nut receptacles

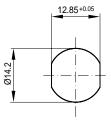
• Panel cutout for jam nut receptacles





Wall

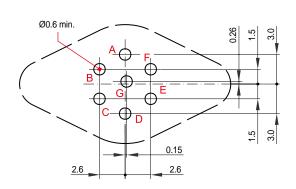




Note:
Use mounting tool VG96934 Z10; Torque 2 Nm max.

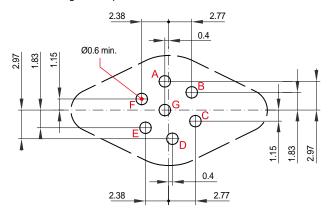
PCB terminal

• Panel drilling for plugs



Note:
These mounting borings can also be used for NF07 Series receptacles

• Panel drilling for receptacles

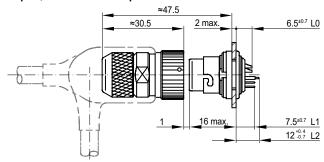




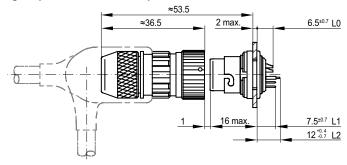
Assembly and installation dimensions

Series NF07/S

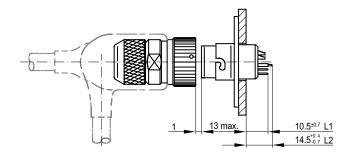
• Cable connecting plug (short adapter) <=> Jam nut receptacle



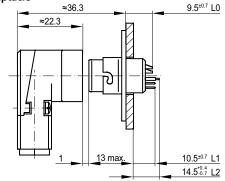
• Cable connecting plug (long adapter) <>> Jam nut receptacle



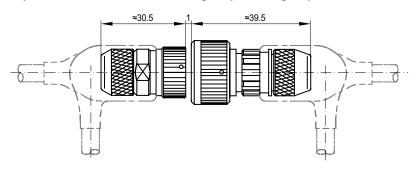
• Cable connecting plug (short adapter) <=> Flange mount receptacle



• 90° Cable connecting plug 🖘 Flange mount receptacle



• Cable connecting plug (short adapter) <=> Reinforced cable connecting receptacle (long adapter)

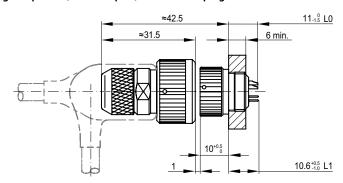


SCHALTBAU Connect Contact Control

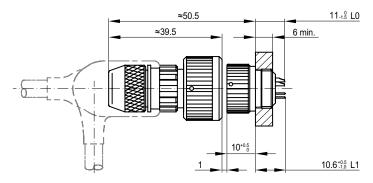
Assembly and installation dimensions

Series NF07 /S

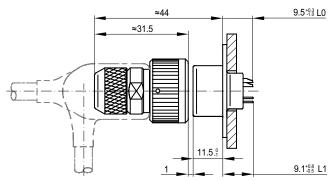
• Reinforced cable connecting receptacle (short adapter) <=> Jam nut plug



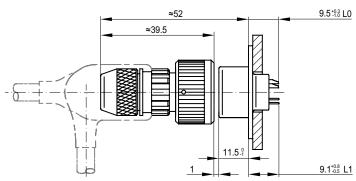
• Reinforced cable connecting receptacle (long adapter) 😂 Jam nut plug



 $\bullet \ \ Reinforced\ cable\ connecting\ receptacle\ (short\ adapter) \Longleftrightarrow Flange\ plug$



• Reinforced cable connecting receptacle (long adapter) <=> Flange plug



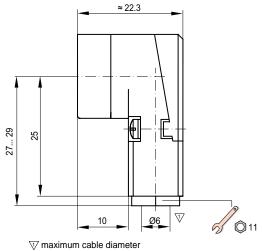


90° cable connecting plug

Series NF10

Shell part 1





Ordering code Example: See also ordering information on page



					•
NF	10	Α	1	L0	A17/S
•	•	•	•	•	•
1	2	3	4	(5)	6
NF	10	A A A A	1 2 3 4 5	L0 L0 L0 L0	A17/S A17/S A17/S A17/S A17/S

Note:
Terminal styles on page 32

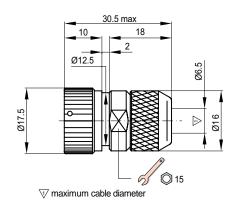
Cable connecting plug (short adapter)

Series NF10

Shell part 1

LO A1/S

Device outline



Ordering code

Example:
See also ordering information on page 6

NF 10

NF 10

NF 10

1	2	3	4	(5)	6
NF	10	A A A A	1 2 3 4 5	L0 L0 L0 L0	A1/S A1/S A1/S A1/S A1/S

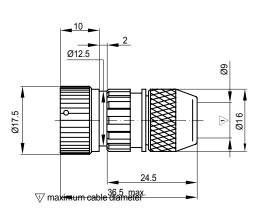
Note:
Terminal styles on page 32

Cable connecting plug (long adapter)

Series NF10

Shell part 1

Device outline



Ordering code

Example: See also ordering information on page 6



NF	10	Α	1	L0	/S
•	•	•	•	•	•
1	2	3	4	(5)	6
		A A	1 2	L0 L0	/S /S

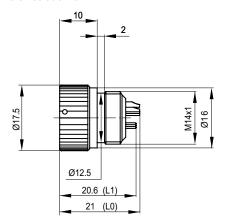
A 1 L0 /S A 2 L0 /S NF 10 A 3 L0 /S A 4 L0 /S A 5 L0 /S

Note:
Terminal styles on page 32



Jam nut plug Series NF10

Device outline



Ordering code Shell part 1 NF L0 /S Example: 10 See also ordering information on page 6 2 1 3 4 (5) 6 L0 L0 Ε /S /S /S /S /S NF 10 3 L0 L0 L1 /S /S /S /S /S L1 L1 NF 10 Ε L1 Ε L1

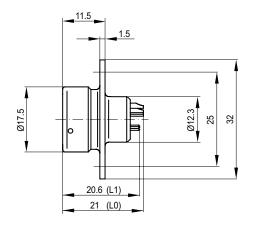
NF

10

Note: Terminal styles on page 32

Flange plug

Device outline



Ordering code

Example: See also ordering information on page 6



•	•	•	•	•	•
1	2	3	4	(5)	6
NF	10	F F F F	1 2 3 4 5	L0 L0 L0 L0 L1	/S /S /S /S /S
NF	10	F F F F	1 2 3 4 5	L1 L1 L1 L1 L1	/S /S /S /S

Note:
Terminal styles on page 32

Cable connecting plug (rubber sleeve)

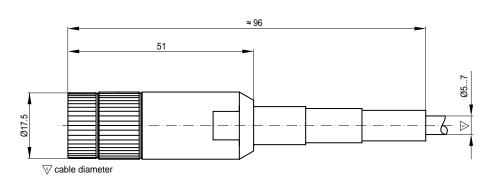
Series NF10

Series NF10

Shell part 1

L0 /S

Device outline



Ordering code

Shell part 1

Example:

See also ordering information on page 6

NF	10	L	1	L0	/S
•	•	•	•	•	•
1	2	3	4	(5)	6
NF	10	L L L L	1 2 3 4 5	L0 L0 L0 L0 L0	/S /S /S /S

Note:
Terminal styles on page 32

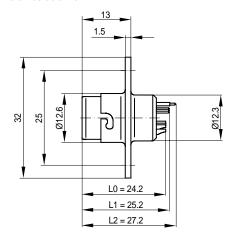


Flange mount receptacle

Series NF10

Shell part 1

Device outline



Ordering code

L0 /S Example: NF 10 See also ordering information on page 6 1 2 3 4 (5) 6 В L0 L0 В NF В L0 10 В L0 В L0 L1 В В L1 NF 10 В L1 L1 L1 В L2 L2 В В L2 NF 10 В В L2



Note:

Terminal styles on page 32

Jam nut receptacle

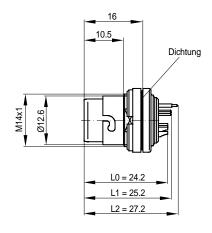
Series NF10

Shell part 1

L2

В

Device outline



Ordering code

Example:	NF	10	C	1	L0	/S
See also ordering information on page 6	•	•	•	•	•	•
	1	2	3	4	(5)	6
			C	1 2	L0 L0	/S /S
	NF	10	C C	3 4 5	L0 L0 L0	/S /S /S
			C	1 2	L1 L1	/S /S
	NF	10	C	3	L1 L1	/S /S
			C	5	L1	/S
			C	1 2	L2 L2	/S /S
	NF	10	C	3 4 5	L2 L2 12	/S /S /S

1

2



Note:

Terminal styles on page 32

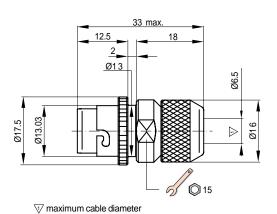
Cable connecting receptacle (short adapter)

Series NF10

(5)

6

Device outline



Terminal styles on page 32

Ordering code

Example: See also ordering information on page 6



Shell part 1 NF 10 D LO /S

4



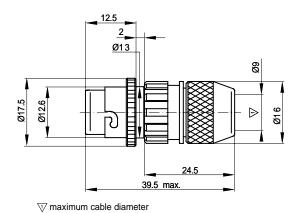
3



Cable connecting receptacle (long adapter)

Series NF10

Device outline



Ordering code Shell part 1 D7/S Example: NF 10 L0 See also ordering information on page 6 1 2 3 4 (5) 6 D LO D7/S D D D7/S 2 L0 NF 07 3 L0 D7/S D L0 D7/S LO D7/S

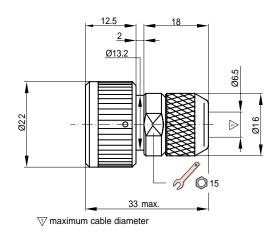
Note:
Terminal styles on page 32

Reinforced cable connecting receptacle (short adapter)

Series NF10

Shell part 1

Device outline



Ordering code

/S NF L0 Example: 10 See also ordering information on page 6 1 2 3 4 (5) 6 Ν LO /S /S /S Ν 2 L0 NF Ν 3 10 L0 Ν L0 /S /S

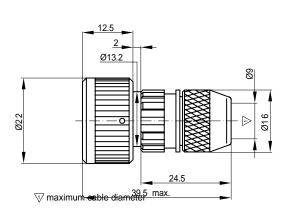
Note:
Terminal styles on page 32

Reinforced cable connecting receptacle (long adapter)

Series NF10

Shell part 1

Device outline



Ordering code

NF LO /S Example: 10 See also ordering information on page 6 (5) 1 2 3 4 6 L0 /S /S /S /S 2 L0 K K NF 10 L0 K 4 L0

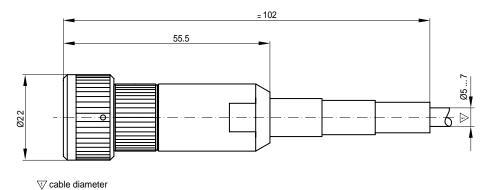
Note:
Terminal styles on page 32



Reinforced cable connecting receptacle (rubber sleeve)

Series NF10

Device outline



Ordering code

Shell part 1

Example:

See also ordering information on page 6

NF	10	M	1	L0	*2
•	•	•	•	•	•
1	2	3	4	(5)	6
NF	10	M M M M	1 2 3 4 5	LO LO LO LO	*2 *2 *2 *2



Terminal styles on page 32

*2 Customized designs upon request

Heatshrink boots

Series NF10

Device outline

straight

Heatshrink boot,

approx. 70



Ø4.5...8

Heatshrink boot,

90°

Ordering code

Accessories / Shell part 2

Example:

See also ordering information on page 6

203W 112-30

① Heatshrink boot, straight

203W112-30 *
Heatshrink boot, 90°
224K012-30 *

Note:

* Order direct from Raychem or other OEMs

Seals NF Z1 and NF Z2

Series NF10

Device outline

Ø18

Gasket NF Z1 (Flange seal)

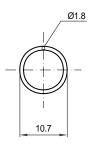
32



1 thick

2.8

Sealing ring NF Z2 (O-ring)



Ordering code

Accessories / Shell part 2

Example:

See also ordering information on page 6



1

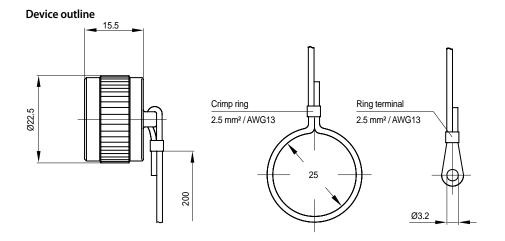
Gasket NF Z1

Sealing ring NF Z2



Protection cap VG96934 Z3

Series NF10



Ordering code Accessories/Protection cap

See also ordering information on page 6

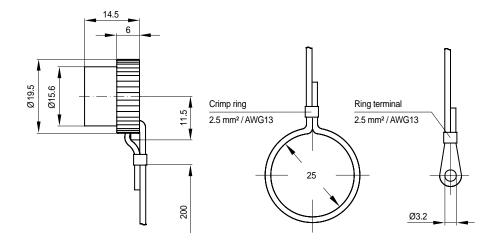


It is possible to fit loops or ring terminals (both included)

Protection cap VG96934 Z4 (rubber)

Series NF10

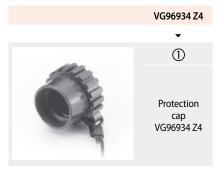
Device outline



Accessories/Protection cap Ordering code

Example:

See also ordering information on page 6

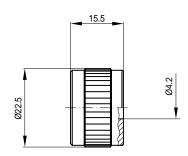


It is possible to fit loops or ring terminals (both included)

Dummy receptacle VG96934 Z6

Series NF10

Device outline



Ordering code Accessories/Protection cap

Example:

See also ordering information on page 6



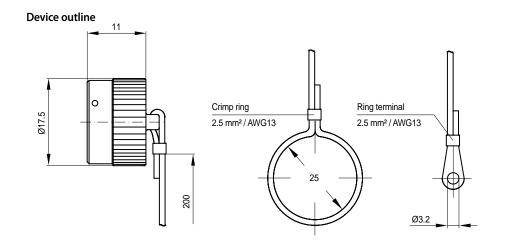
case of a device

Dummy receptacle to be mounted onto the For receiving a free plug cable



Protection cap for polarization NF10 Z8/x

Series NF10



Ordering code Accessories/Protection cap Example:

See also ordering information on page 6



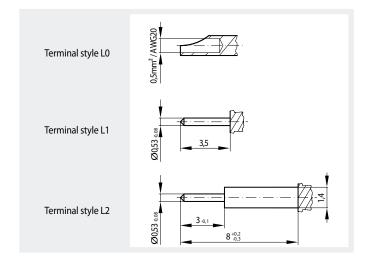
It is possible to fit loops or ring terminals (both included)

Terminal styles, Assembly tool Z16

Series NF10

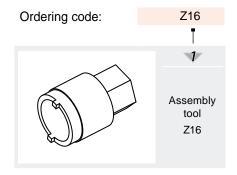
Accessories

Terminal styles



Assembly tool Z16

Assembly tool for jam nut receptacles NF10 C x xx



Note:Assembly tool for jam nut receptacles NF10 C x xx Width across flats SW13, use with torque spanner,

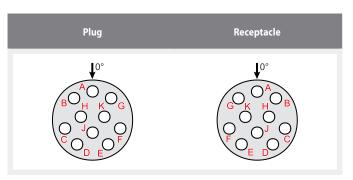


Terminals must not be subjected to force or stress.

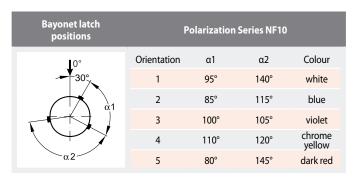
Contact arrangement, Polarization

Series NF10

Contact arrangement



Polarization





Note:

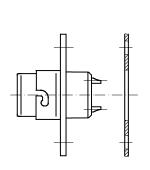
Planforms seen from connector face

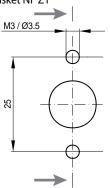


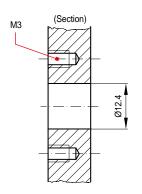
Mounting borings Series NF10

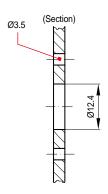
Flange mount receptacles

• Panel cutout for flange mount receptacles with gasket NF Z1

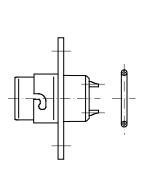


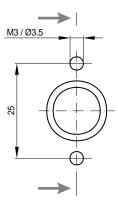


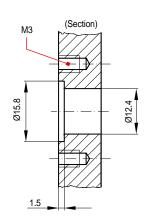


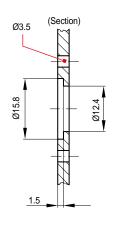


• Panel cutout for flange mount receptacles with sealing ring NF Z2



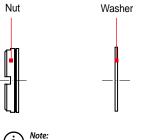






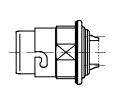
Jam nut receptacles

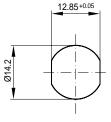
Panel cutout for jam nut receptacles





Wall

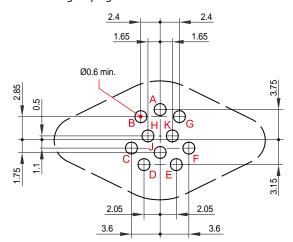




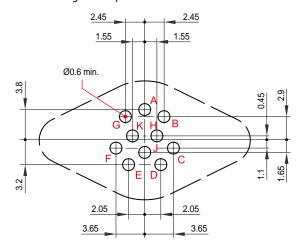
Note:
Use mounting tool VG96934 Z10; Torque 2 Nm max.

PCB terminal

• Panel drilling for plugs



• Panel drilling for receptacles

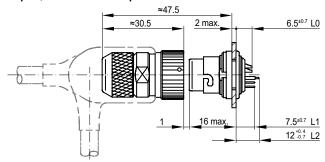




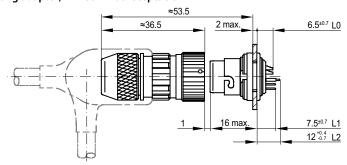
Assembly and installation dimensions

Series NF10

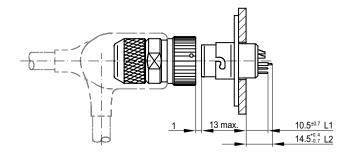
• Cable connecting plug (short adapter) <=> Jam nut receptacle



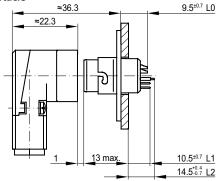
• Cable connecting plug (long adapter) <>> Jam nut receptacle



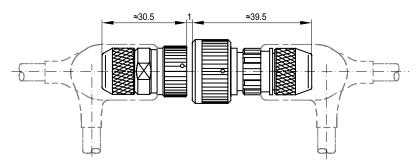
• Cable connecting plug (short adapter) <=> Flange mount receptacle



• 90° Cable connecting plug 🖘 Flange mount receptacle



• Cable connecting plug (short adapter) <=> Reinforced cable connecting receptacle (long adapter)

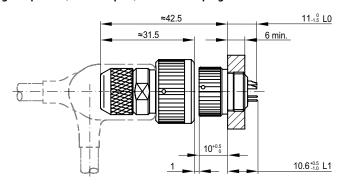


SCHALTBAU Connect Contact Control

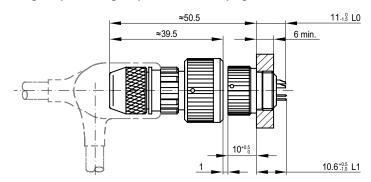
Assembly and installation dimensions

Series NF10

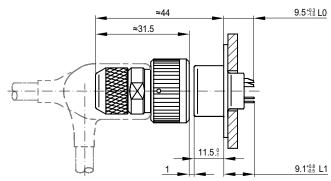
• Reinforced cable connecting receptacle (short adapter) <=> Jam nut plug



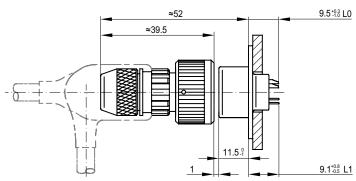
• Reinforced cable connecting receptacle (long adapter) 😂 Jam nut plug



 $\bullet \ \ Reinforced\ cable\ connecting\ receptacle\ (short\ adapter) \Longleftrightarrow Flange\ plug$



• Reinforced cable connecting receptacle (long adapter) <=> Flange plug



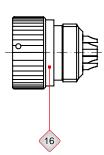


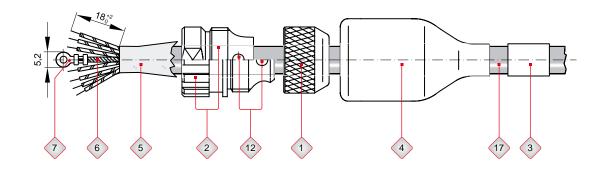
Cable assembly details for plugs with short or long adapter

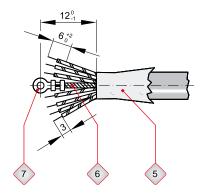
Series NF

Styles A, D, J, K and N with cable according to VG95218-11.

Details not mentioned are to be chosen appropriately.







The lock nut (1) and the connector backshell (2) are to be loosened from the connector (16).

Slide lock nut (1) heatshrink boot (4) and, if used, sleeve (3) for fixing the protective cap on the cable.

Remove jacket from cable end (17) approx. 18+2 mm with cable stripper.

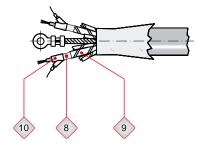
Fold back screen meshing (5).

If existing, open and cut off foil type shielding with slitting tool (knife or similar).

Strip approx. 3 mm and tin single wires. Use thermal stripping device.

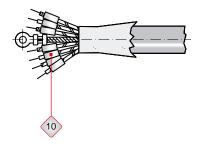
Shorten strain relief rope (6) to indicated dimensions

12-1 mm with crimp ring eyelet (7).



If existing:

Insulate the single wire screen meshing (8) of the shielded single wire (9) with small PTFE tape and if required gather them and crimp them together with an insulated single wire on the appropriate contact.



Note:

Prior to the form fit extrusion-coating of the connector, the connector backshell is to be potted.

If the connector backshell is not to be potted:

Slide shrinkable tubings (10) diameter 1.6 mm to 2.4 mm, approx. 7 mm long - over single wires or insulate with small PTFE tape.

Note

For easier handling, clamp connector in an appropriate fixture and fix cable in suitable holder.

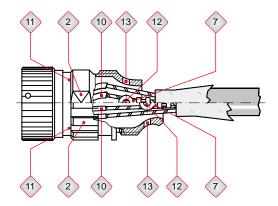


Solder single wires on the contacts with filament type extra thin tin solder LSn60, diameter 1 mm with acid free flux core. Temperature stabilized soldering iron with a tip diameter of approx. 2 mm.

Solder tip temperature 310°C max.; soldering time 4 seconds max.

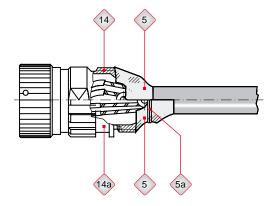
Slide insulating tubing (10) over solder cups (and shrink fit them) Apply on threads (11) of plug conductive adhesive (only on first thread) and screw on connector backshell (2).

Tighten securely with pliers covered with plastic or rubber.



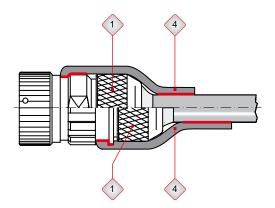
Slide cable in connector backshell (2) so that strain relief split pin (12) can be slid through bore holes (13) in connector backshell (2) and cable eye or ring eyelet (7).

The ring eyelet should be on the inner curve side at an angular connector backshell to avoid compressive load of the single wires at tensile load.



Fold the screen meshing (5) over the back of the conical adapter (14), and trim off just short of the thread.

In case of connector backshells with long adapter (14a), the screen meshing (5) has to be fixed by additional wire (5a).



Apply conductive adhesive to the first threads.

Screw jam nut (1) onto the connector backshell and tighten securely with pliers.

Intermediate examination:

Check contact resistance, insulation resistance and dielectric strength according to VG 96934-1, Test No.5.12 and 5.13.

Unless a moulded backfitting is to be applied: Mount heatshrink boot (4) according to VG95343-4.

Note:

In order to achieve the tightness IP67 mentioned in the data sheet, the heatshrink boot has to be glued to the parts marked in red in the op-



posite drawing.

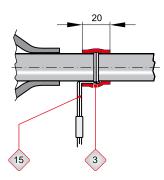
Schaltbau recommends to use adhesives made by manufacturers of the heatshrink boot.

Final examination:

Insulation resistance and dielectric strength tests according to VG 96934-1, Test No. 5.12 and 5.13.

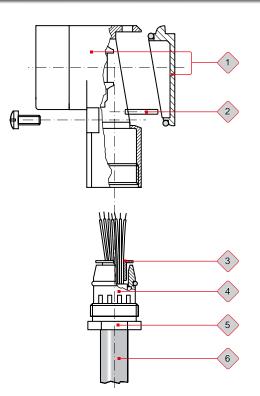
Fitting of the protective cap to cable:

Loop cord (15) of protective cap round the cable. Shrink on heatshrink tube (3).



Cable assembly details for 90° cable connecting plug

Series NF



Slide pressure screw (5) and strain relief (4) on cable before screen end.

Slide screen cone (3) between single wire and screen meshing.

Press strain relief (4) over screen cone (3) with screen meshing from below.

The screen meshing is now between strain relief (4) and screen cone (3).

Cut off projecting parts of the screen meshing.

Insert premounted cable into housing (1).

Knot strain relief rope around the strain relief split pin (2).

An effective strain relief can only be achieved by a permanently and tightly knotted strain relief rope.

For further assembly steps (insulate, tin, solder and insulate single wires) and test please refer to prior chapter.

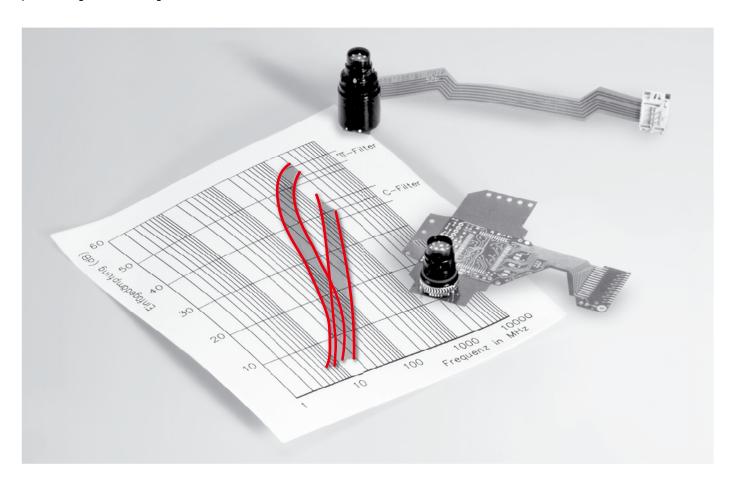


SF07, SF10 Filtered connectors

Series SF

Connector series NF07 and NF10 were especially designed for application in modern telecommunication engineering. In case an additional protection against electromagnetic disturbance is desired, we recom-

mend our shielded and filtered connectors of series SF07 and SF10. Please inquire for customized designs.



More and more highly efficient electronic systems co-operate on limited space. The protection against electromagnetic influence increasingly requires EMC-suitable interfaces.

Shielded and filtered connectors help to protect the whole system against undesirable electromagnetic disturbance.

Our solutions allow to avoid malfunctions and direct or indirect economic losses such as:

- Malfunction of peripheral electronics
- Destruction of modules
- Machine standstills.

For this purpose the SF concept offers filter systems in

- Planar technique:
 - C-filter
- Modular technique:
 - C-filter
 - π-filter
- Tubular technique:
 - C-filter
 - π-filter
 - RFI-filter

Please do not hesitate to request detailed information.



Schaltbau GmbH

For detailed information on our products and services visit our website or give us a call!

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Certified to DIN EN ISO 14001 since 2002. For the most recent certificate visit our website.

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Electrical Components and Systems for

Railway Engineering and Industrial Applications						
Connectors	 Connectors manufactured to industry standards Connectors to suit the special requirements of communications engineering (MIL connectors) Charging connectors for battery-powered machines and systems Connectors for railway engineering, including UIC connectors Special connectors to suit customer requirements 					
Snap-action switches	 Snap-action switches with positive opening operation Snap-action switches with self-cleaning contacts Enabling switches Special switches to suit customer requirements 					
Contactors	 Single and multi-pole DC contactors High-voltage AC/DC contactors Contactors for battery powered vehicles and power supplies Contactors for railway applications Terminal bolts and fuse holders DC emergency disconnect switches Special contactors to suit customer requirements 					
Electrics for rolling stock	 Equipment for driver's cab Equipment for passenger use High-voltage switchgear High-voltage heaters 					

High-voltage roof equipment Equipment for electric brakes

to customer requirements

Design and engineering of train electrics