NR Series

Non-waterproof

RoHS

Quick lock

Safety standard certified products available

Overview

- Connectors created by evolving NJC Series to the quick lock system.
- Suitable for use in portable equipment and for handling in small spaces.

Feature

RoHS	RoHS Directive compliant
Waterproof	Non
Lock method	Quick lock
Features of mechanism/ material	○ Die cast shell with zinc alloy. ○ Smooth coupling thanks to employment of 5-key system guide. ○ Installation in a small space enabled by use of the L za.
Standards	○ UL・CSA standard certified connectors available.（UL : UL1977　CSA : C22.2 No.182.3 ） ○ Safety standard certified connectors available. (EN61984 compliant, TÜV certified) Note: The specifications of safety standard certified products are slightly different from those of standard products. For the rated voltage, current and cable conductor cross sectional area, refer to A List of Standards Acquired (pp.127 and 130).
Cable termination	Soldering

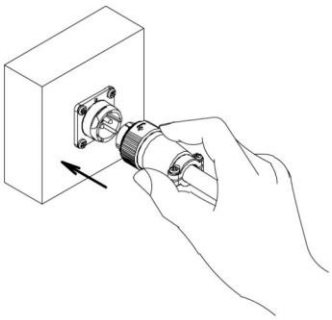
Characteristics Insulation resistance , Withstand voltage , Contact resistance　p.46

The pin contact type has an exposed electrode. If it is used on the [power supply] side, it may cause electric shock or short-circuit accidents. To prevent such accidents, use the socket contact type on the [power supply] side and the pin contact type on the [equipment] side.

Insertion

Align the plug and the guide of the mating connector (receptacle/adapter) and push in straight.

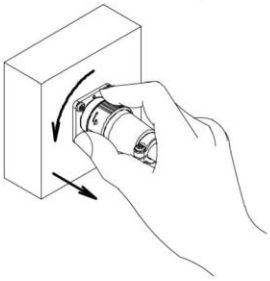
Caution: When inserting, do not turn the coupling nut.



Extraction

With the coupling nut turned CCW 45 degrees in the arrow direction, extract the connector.

Caution: When extracting, do not turn the end bell.



NR Series

Product No. designation

NR - 24 ■ - P M _ _
① ② ③ ④ ⑤ ⑥ ⑦

① Series designation
② Shell size
③ Number of contacts
④ Shell shape
⑤ Contact shape < Pin (male) contact : M , Socket (female) contact : F >
⑥ Guide position change symbol (X , Y , Z) 《 Required only when changing the guide position 》
⑦ Safty standard specification (< UL • CSA > , < TUV >)
《 Required only when safety standard is to be specified. 》 For applicable products, see pp. 127 and 130.

《Option》
• When using a plural number of same products at the same time, the guide position can be changed in order to prevent mis-insertion.
(For applicable products, see below.)
Product name example : NR-2010-PFX
Guide position change symbol (X, Y, Z) in the red character part.

Cable termination : Soldering

Material and Finish

	Material	Finish
Shell	Zinc alloy (Partially aluminum alloy)	Crape chrome plating
Insulator	Synthetic resin	—
Contact	Copper alloy	Silver plating Gold plating

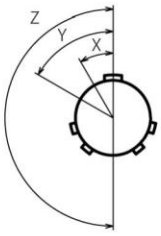
Operating temperature range

Shell size	Number of Contacts	Operating temperature range
20	2 , 3 , 4 , 5	-40℃ to +100℃
24	2 , 3 , 4 , 5	
20	7 , 10 , 12	-25℃ to +85℃
24	10 , 14 , 16	
20	14	-25℃ to +60℃
24	21 , 24	

To change the guide position (Following number of contacts only)

Shell size	Number of Contacts	Guide Position Symbol		
		X	Y	Z
20	7	30°	—	—
	＊ 10	45°	90°	315°
	12		95°	190°
24	＊ 10	45°	90°	315°
	＊ 14			
	＊ 16			

＊ UL • CSA products supported also.



An image of guide position change

< When viewed from the pin (male) contact side coupling face >

Upper limit of ambient temperature at rated current

TÜV products only

	Number of Contacts			
Shell size	2	3	4	5
20	+80℃	+80℃	+75℃	—
24	+70℃	+70℃	+80℃	+80℃

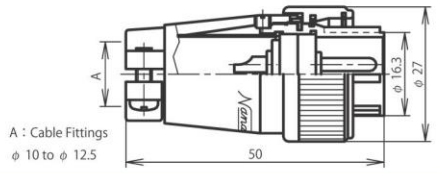
(**Note**) Max.ambient temp. at rated current
(Based on TÜV certification test results)

G Type

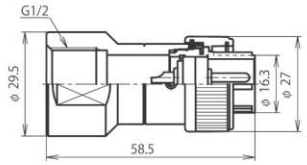
【Power receiving side】< Pin (male) contact used >

【Power supply side】< Socket (female) contact used >

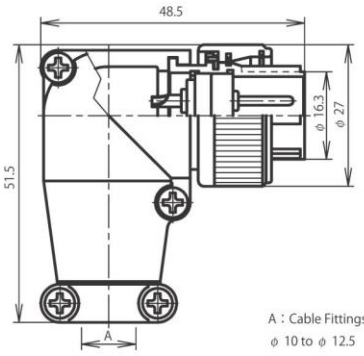
Plug



NR-20 ■ -PM



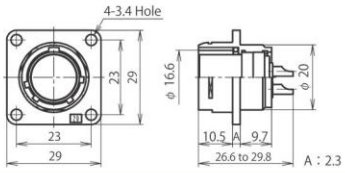
NR-20 ■ -GPM1/2 (Note)



NR-20 ■ -LPM

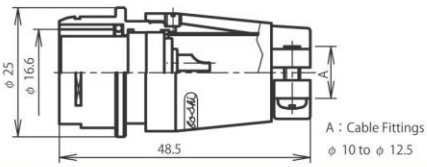
Coupled

Receptacle

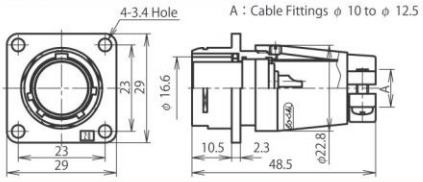


NR-20 ■ -RF

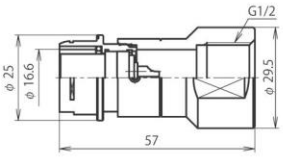
Adapter



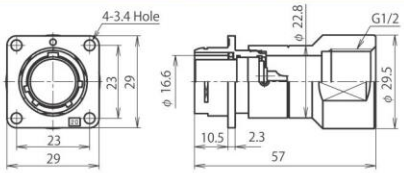
NR-20 ■ -AdF



NR-20 ■ -Ad(F)F

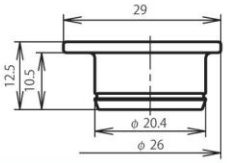


NR-20 ■ -GAdF1/2 (Note)



NR-20 ■ -GAd(F)F1/2 (Note)

Accessory



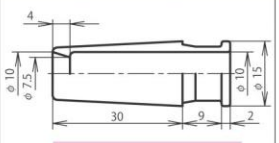
Plug cap : NR-20-PCa • 1

For receptacle

Rope for cap L60

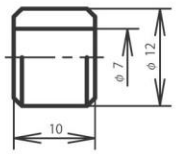
For plug , adapter

Rope for cap L90

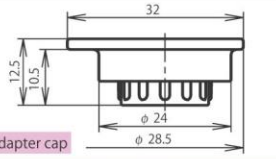


Used commonly for NJC, NR

Cable bushing : NJC-20-CB

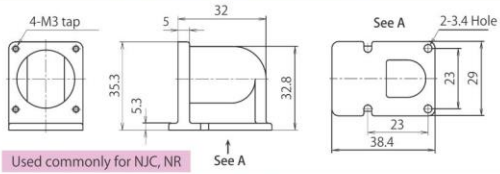


Cable bushing : CBAS-12-7



Used also as adapter cap

Receptacle cap : NR-20-RCa • 1



NJC-20-L za

■ indicates the number of contacts.

Note: We show sizes by the nominal "G(PF)" of parallel pipe threads. p.135

The conductor cross sectional area is less than the following value.However, for safety standard certified products, use a cable having a value shown on pp.127 and 130.

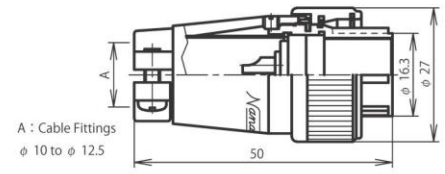
[ ] : Gold plating contact

Shell size	Number of Contacts	2	3	4	5	7	10	12	14
20	Contact arrangement <When viewed from the pin (male) contact coupling side>								
	Safety standard (Note-1)	UL・CSA TÜV	UL・CSA TÜV	UL・CSA TÜV	UL・CSA				–
	Rating (Allowable current for signals)	15A		10A			5A		[3A]
	Withstand voltage (V r.m.s.)	1,500				1,000			500
	Wire size (㎟)	2		1.25			0.5		0.3
	Remarks	–							For signals

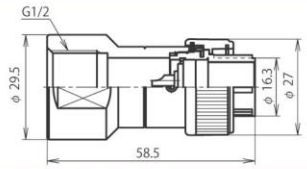
Note-1 : Specified separately. Selection of either "specified as a set of UL and CSA" or "TÜV specified." For safty standards, see pp.127 and 130.

S Type

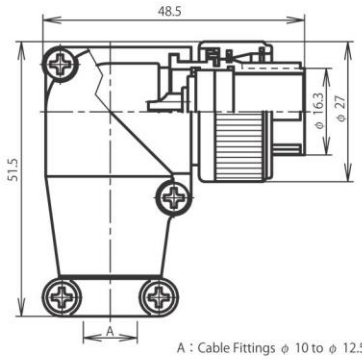
【Power supply side】< Socket (female) contact used >



NR-20 ■ -PF



NR-20 ■ -GPF1/2 (Note)



NR-20 ■ -LPF

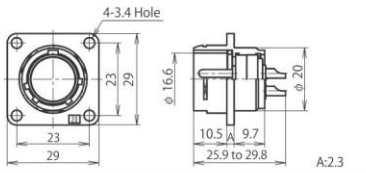
Plug

Coupled

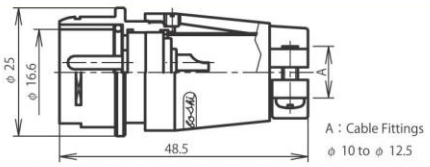
Receptacle

Adapter

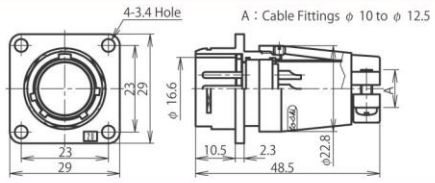
【Power receiving side】< Pin (male) contact used >



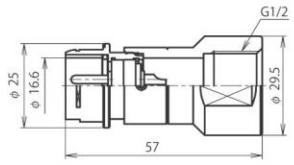
NR-20 ■ -RM



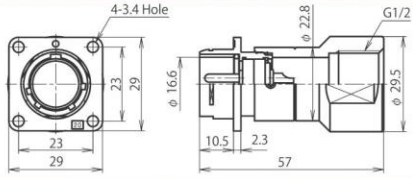
NR-20 ■ -AdM



NR-20 ■ -Ad(F)M

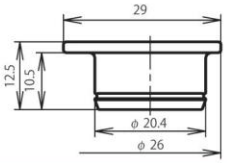


NR-20 ■ -GAdM1/2 (Note)



NR-20 ■ -GAd(F)M1/2 (Note)

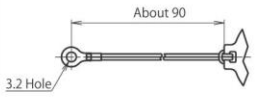
Accessory



Plug cap : NR-20-PCa • 1

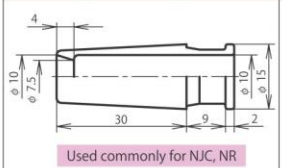
For receptacle

Rope for cap L60



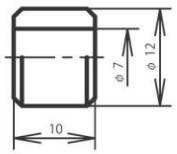
For plug , adapter

Rope for cap L90



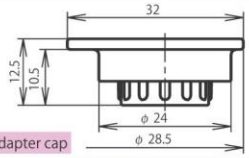
Used commonly for NJC, NR

Cable bushing : NJC-20-CB



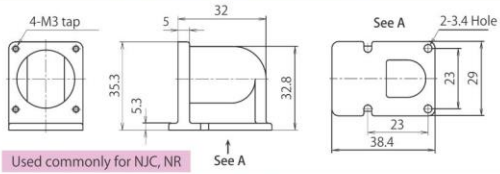
Cable bushing : CBAS-12-7

Accessory



Used also as adapter cap

Receptacle cap : NR-20-RCa • 1



Used commonly for NJC, NR

NJC-20-L za

■ indicates the number of contacts.

Note: We show sizes by the nominal "G(PF)" of parallel pipe threads. p.135

The conductor cross sectional area is less than the following value.However, for safety standard certified products, use a cable having a value shown on pp.127 and 130.

[ ] : Gold plating contact

Shell size	Number of Contacts	2	3	4	5	7	10	12	14
20	Contact arrangement <When viewed from the pin (male) contact coupling side>								
	Safety standard (Note-1)	UL・CSA TÜV	UL・CSA TÜV	UL・CSA TÜV	UL・CSA				—
	Rating (Allowable current for signals)	15A			10A		5A		— [3A]
	Withstand voltage (V r.m.s.)	1,500				1,000			500
	Wire size (㎟)	2			1.25		0.5		0.3
	Remarks	—							For signals

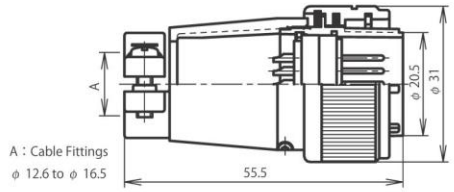
Note-1 : Specified separately. Selection of either "specified as a set of UL and CSA" or "TÜV specified." For safty standards, see pp.127 and 130.

【Power receiving side】< Pin (male) contact used >

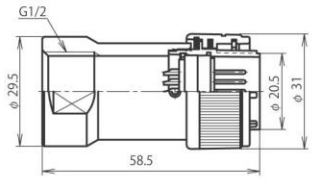
G Type

【Power supply side】< Socket (female) contact used >

Plug



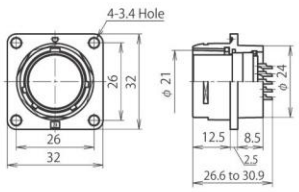
NR-24 ■ -PM □



NR-24 ■ -GPM1/2 (Note)

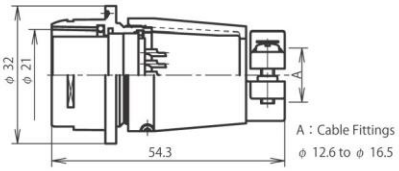
Coupled

Receptacle

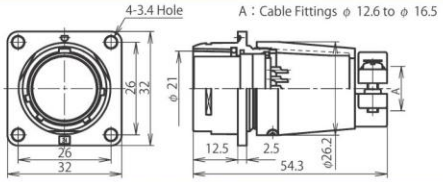


NR-24 ■ -RF

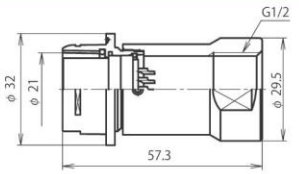
Adapter



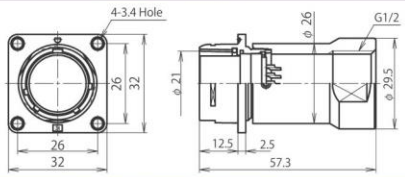
NR-24 ■ -AdF



NR-24 ■ -Ad(F)F

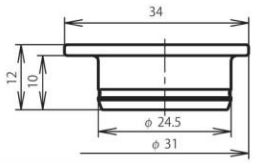


NR-24 ■ -GAdF1/2 (Note)

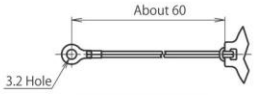


NR-24 ■ -GAd(F)F1/2 (Note)

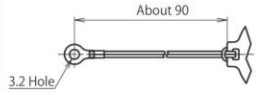
Accessory



Plug cap : NR-24-PCa • 1



For receptacle

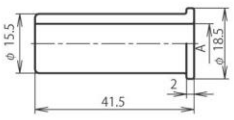


For plug , adapter

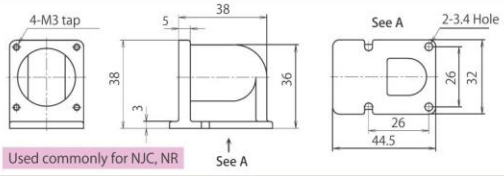
Rope for cap L60

Rope for cap L90

designation	A
NR-24-CB9	φ 8.0 to φ 10.0
NR-24-CB11	φ 10.1 to φ 12.5

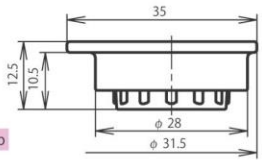


Cable bushing : NR-24-CB



Used commonly for NJC, NR

NJC-24-L za



Used also as adapter cap

Receptacle cap : NR-24-RCa • 1

Note: We show sizes by the nominal "G(PF)" of parallel pipe threads. p.135

■ indicates the number of contacts.

The conductor cross sectional area is less than the following value.However,for safety standard certified products, use a cable having a value shown on pp.127 and 130.

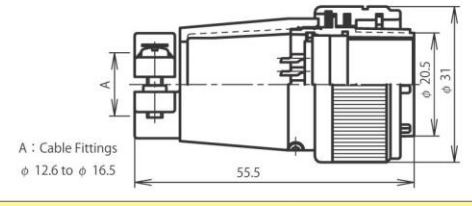
[ ] : Gold plating contact

Shell size	Number of Contacts	2	3	4	5	10	14	16	21	24
24	Contact arrangement <When viewed from the pin (male) contact coupling side>									
	Safety standard (Note-1)	UL·CSA TÜV	UL·CSA TÜV	UL·CSA TÜV	UL·CSA TÜV	UL·CSA			—	
	Rating (Allowable current for signals)	250V							—	
		20A		15A		10A	5A		3pcs=6A [18pcs=3A]	[3A]
	Withstand voltage (V r.m.s.)	1,500				1,000			500	
	Wire size (㎟)	3.5		2		1.25	0.5		3pcs=0.75 18pcs=0.3	0.3
	Remarks	—							For signals	

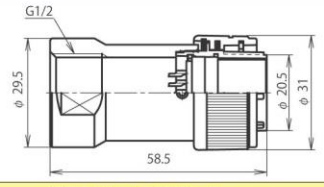
Note-1 : Specified separately. Selection of either "specified as a set of UL and CSA" or "TÜV specified." For safty standards, see pp.127 and 130.

S Type

【Power supply side】< Socket (female) contact used >



NR-24 ■ -PF



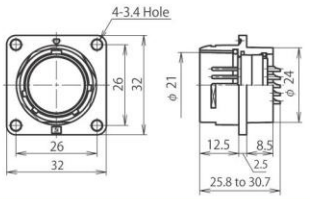
NR-24 ■ -GPF1/2 (Note)

Plug

Coupled

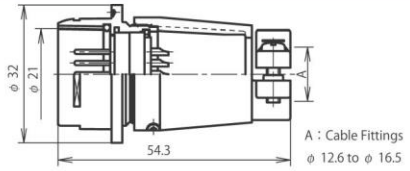
【Power receiving side】< Pin (male) contact used >

Receptacle

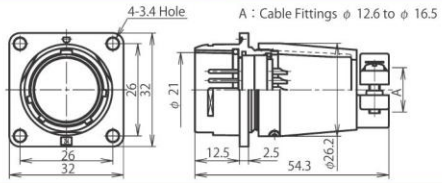


NR-24 ■ -RM

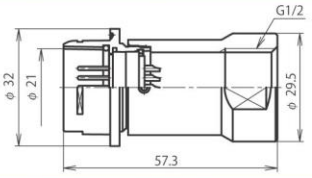
Adapter



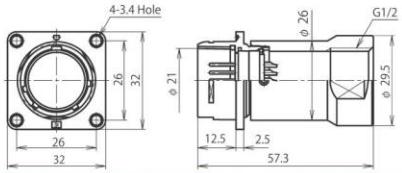
NR-24 ■ -AdM



NR-24 ■ -Ad(F)M

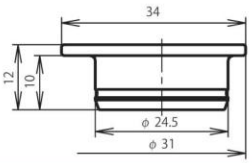


NR-24 ■ -GAdM1/2 (Note)

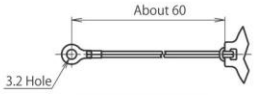


NR-24 ■ -GAd(F)M1/2 (Note)

Accessory

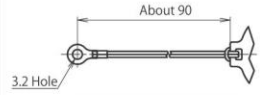


Plug cap : NR-24-PCa • 1



For receptacle

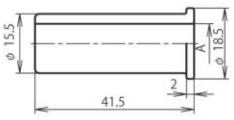
Rope for cap L60



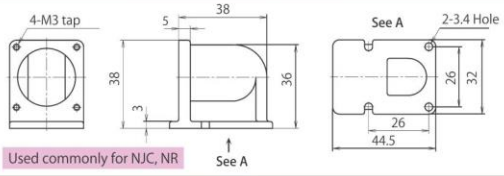
For plug , adapter

Rope for cap L90

designation	A
NR-24-CB9	φ 8.0 to φ 10.0
NR-24-CB11	φ 10.1 to φ 12.5

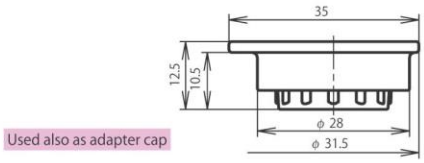


Cable bushing : NR-24-CB



NJC-24-L za

Accessory



Receptacle cap : NR-24-RCa • 1

Note: We show sizes by the nominal "G(PF)" of parallel pipe threads. p.135

■ indicates the number of contacts.
The conductor cross sectional area is less than the following value.However, for safety standard certified products, use a cable having a value shown on pp.127 and 130.

[ ] : Gold plating contact

Shell size	Number of Contacts	2	3	4	5	10	14	16	21	24
24	Contact arrangement <When viewed from the pin (male) contact coupling side>									
	Safety standard (Note-1)	UL・CSA TÜV	UL・CSA TÜV	UL・CSA TÜV	UL・CSA TÜV	UL・CSA			—	
	Rating (Allowable current for signals)	250V							—	
		20A		15A		10A	5A		3pcs=6A [18pcs=3A]	[3A]
	Withstand voltage (V r.m.s.)	1,500				1,000			500	
	Wire size (㎟)	3.5		2		1.25	0.5		3pcs=0.75 18pcs=0.3	0.3
	Remarks	—							For signals	

Note-1 : Specified separately. Selection of either "specified as a set of UL and CSA" or "TÜV specified." For safty standards, see pp.127 and 130.

Number of contacts

Shell size	Contact	Insulation resistance (MΩ)			Contact resistance (mΩ)			Withstand voltage (V r.m.s.)		
		Normal products	Safety standard		Normal products	Safety standard		Normal products	Safety standard	
			UL・CSA	TÜV		UL・CSA	TÜV		UL・CSA	TÜV
20	2	DC 500V 2,000 min.			3 max.			1,500		
	3									
	4									
	5	DC 500V 2,000 min.		—	3 max.		—	1,500		—
	7							1,000		
	10	DC 500V 1,000 min.			5 max.					
	12									
	14	DC 250V 1,000 min.	—		5 max.	—		500	—	
24	2	DC 500V 5,000 min.		DC 500V 2,000 min.	3 max.			1,500		
	3									
	4									
	5									
	10	DC 500V 2,000 min.		—	3 max.		—	1,000		—
	14	DC 500V 1,000 min.			5 max.					
	16									
	21	DC 250V 1,000 min.	—		5 max.	—		500	—	
	24									