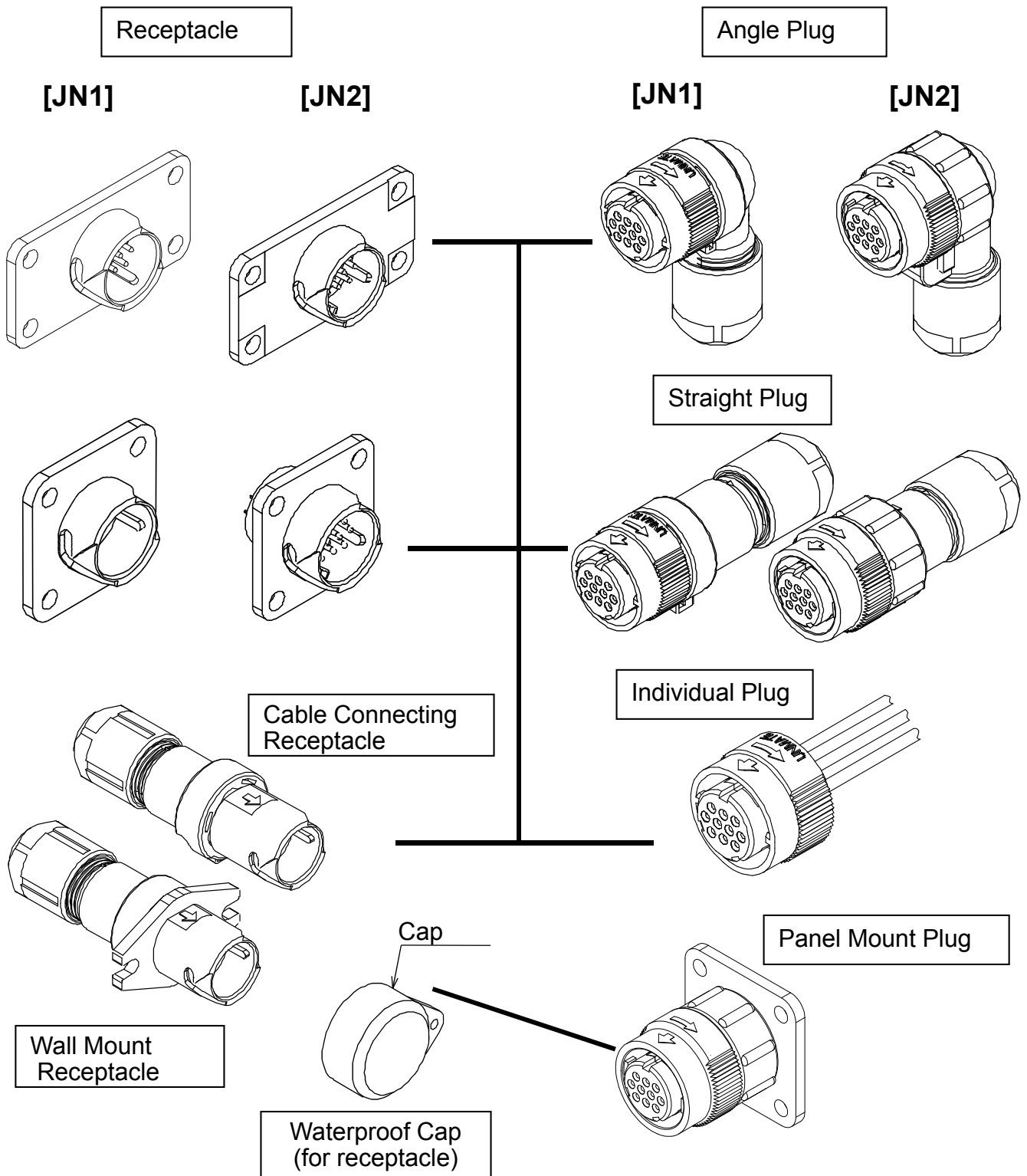




Small Circular Connector  
**JN1/JN2 Series**

CONNECTOR  
 MB-0054-11  
 May 2018



The JN1/JN2 Series is a waterproof circular connector with one-touch locking mechanism developed as an interface for industrial devices. It is available in an all-plastic type, JN1, and a partially metal-reinforced robust type, JN2. Both are compact designs and suitable for a variety of electronic devices. The 4-contact JN2 is TUV certified. (Patent and design registration applications have been filed.)

## Features

### [JN1]

- An all plastic lightweight connector.
- Easy and secure mating with push-and-twist type one-touch locking mechanism.
- Terminal specifications for receptacle and plug differ by series and number of contacts, please refer to general specifications for each product. Socket contact for 10 position plug is available in both crimp and solder terminations.

The 4-contact receptacle does not incorporate grounding in its shell. Properly grounding the shell will be required in implementing the connector.

- Crimp terminated relay receptacle is available in cable-relay and wall-mount receptacle types (both 4 and 10 positions).
- Plugs available in straight and angled back shell types and individual coupler only type (10 position only). The cable direction of the angle plug can be set in four orientations by rotating the plug in 90 degree increments.
- Mating height of angle plug is 30.8mm from panel surface (both 4 and 10 positions). Individual plug is low profile 16.9mm (10 position only).
- IP67 rated waterproof and dustproof.
- Superb environment-proof performance with vibration and oil resistance.
- Suitable for conduit mounting (except for individual coupler type plug).

### [JN2]

- Mating compatibility to JN1, with considerably reinforced with metal material in part of the outer shell (strength increased threefold over JN1).
- Uses same crimp contact as the JN1.
- Terminal specification for receptacle and plug differs by series and number of contacts, please refer to general specification for each product. 4-contact receptacle body is grounded.
- 4-contact type is TUV certified.
- Plug is available in straight and angle types. The cable direction of the angle plug can be set in four orientations by rotating the plug in 90 degree increments.
- Contact variations: 4, 10 pos.
- Angle plug mating height is 31.3mm from cabinet surface (both 4 and 10 positions).
- IP67 rated waterproof and dustproof.
- Superb environment-proof performance with vibration and oil resistance.
- Suitable for conduit mounting.

## General Specifications

### [JN1]

Item	Specification and Performance	
	10 position	4 position
Number of Contacts	10 position	4 position
Rated Current	3A/pin (#22 size contact)	5A/pin (#20 size contact)
Rated Voltage	200VAC	200VAC
Withstanding Voltage	900VAC (per minute)	2000VAC (per minute)
Insulation Resistance	1000M ohm min.(DC500V energized )	1000M ohm min.(DC500V energized )
Waterproof	IP67	IP67
Airtightness (Individually Waterproofed)	2.9 x 10 <sup>4</sup> PA (per minute) without leakage	2.9 x 10 <sup>4</sup> PA (per minute) without leakage
Operating Temperature	-20 Deg. C to +125 Deg.C	-20 Deg. C to +125 Deg.C
Specification of Wire Connection	Receptacle: Through-hole, solder connection 22AWG (0.3mm <sup>2</sup> ) max. Cable connecting receptacle: Crimp connection 20 to 28AWG Plug: Crimp connection 20 to 28AWG Solder connection 20AWG max.	Receptacle: Solder connection 18 AWG (0.75mm <sup>2</sup> ) max.  Cable connecting receptacle and plug: Solder connection 16 AWG (1.25mm <sup>2</sup> ) max.
Product Specification	JACS-5111	JACS-5111-2
Instruction Manual	JAHL-5111	JAHL-5111
Durability	500 mating cycles	500 mating cycles

**[JN2]**

Item	Specification and Performance	
Number of Contacts	10 position	4 position
Rated Current	3A / pin (#22 size contact)	5A / pin (#20 size contact)
Rated Voltage	200VAC	400VAC (degree of pollution 2, excess voltage category 3)
Withstanding Voltage	900VAC (per minute)	2000VAC (per minute)
Insulation Resistance	1000M ohm min. (DC500V energized)	1000M ohm min. (DC500V energized)
Waterproof	IP67	IP67
Airtightness (Individually Waterproofed)	2.9 X 10 <sup>4</sup> PA (per minute) without leakage	2.9 X 10 <sup>4</sup> PA (per minute) without leakage
Operating Temperature	-20 Deg. C to +100 Deg.C	-20 Deg. C to +100 Deg.C
Specification of Wire Connection	Receptacle: Through-hole, solder connection, 22AWG (0.3mm <sup>2</sup> ) max.  Plug: Crimp connection 20 to 28AWG Solder connection 20AWG max.	Receptacle: Solder connection, 18AWG (0.75mm <sup>2</sup> ) max.  Plug: Solder connection 16AWG (1.25mm <sup>2</sup> ) max.
Product Specification	JACS-5119	JACS-5119-2
Instruction Manual	JAHL-5119	JAHL-5119
Durability	500 mating cycles	500 mating cycles

Please refer to individual drawings for detailed product information.

Materials and Finishes
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## [JN1]

	Component	Material / Finish
Receptacle	Pin insulator	Synthetic resin
	Pin contact	Copper alloy / Au plating (10 pin), Silver plating (4 pin)
Relay Receptacle	Insulator	Synthetic resin
	Assembly nut	Synthetic resin
	Straight endbell	Synthetic resin
	O Ring	Synthetic rubber
	Bushing*	Synthetic rubber (Color: black/gray/brick red/dark green)
	Gland nut	Synthetic resin
	Pin contact (#22)	Au plating
	Pin contact (#20)	Silver plating
Plug	Front insulator	Synthetic resin
	Rear insulator	Synthetic resin
	Coupling nut	Synthetic resin
	Assembly nut	Synthetic resin
	Angle endbell	Synthetic resin
	Straight endbell	Synthetic resin
	O Ring	Synthetic rubber
	Bushing (*)	Synthetic rubber (Color: black/gray/brick red/dark green)
	Gland nut	Synthetic resin
	Spring	Stainless steel
	Spring pin	Stainless steel
	Socket contact	Copper alloy / Au plating (10 pin), Silver plating (4 pin)
Waterproof Cap	Cap	Synthetic rubber

\*Color of bushing is determined by applicable wire size.

Color of Bushing	Applicable Cable
Gray	6.5 to 8.0 Dia.
Black	5.7 to 7.3 Dia.
Dark Green	4.7 to 5.7 Dia.
Brick Red	3.5 to 5.0 Dia.

**[JN2]**

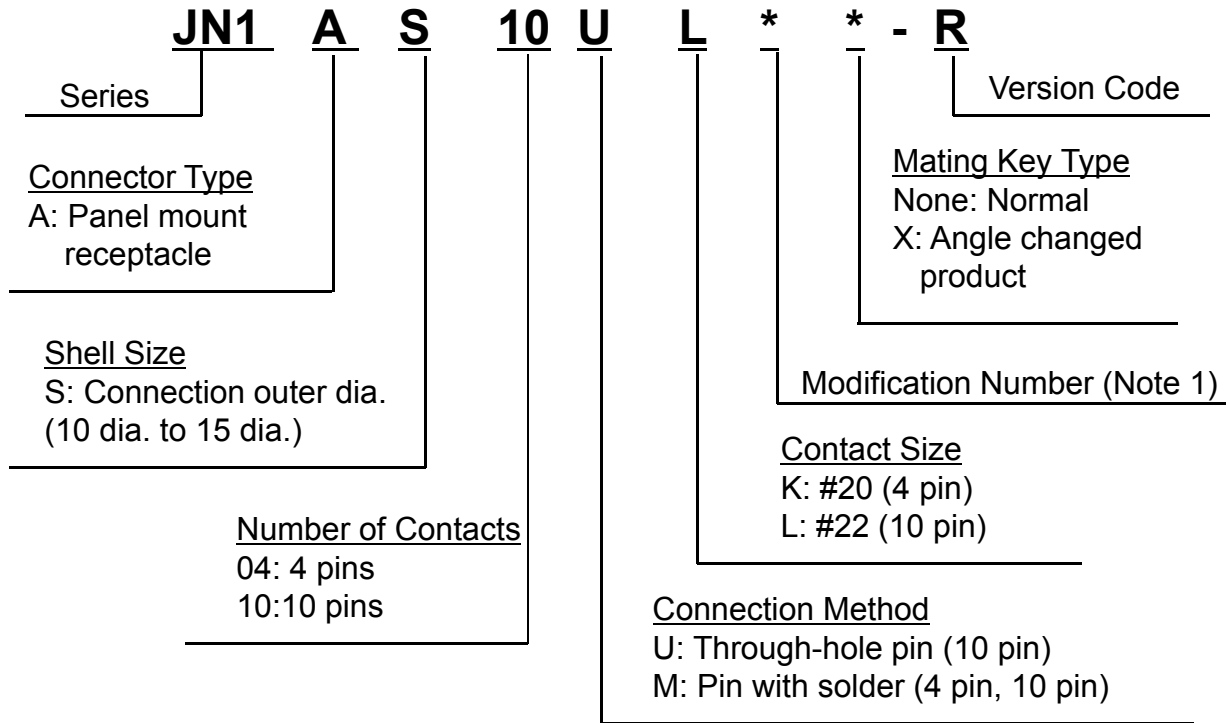
	Component	Material / Finish
Receptacle	Pin insulator	Synthetic resin
	Shell	Zinc die-cast / Zinc plating
	Pin contact	Copper alloy / Au plating (10 pin), Silver plating (4 pin)
Plug	Front insulator	Synthetic resin
	Rear insulator	Synthetic resin
	Coupling nut	Zinc die-cast / Zinc plating (Black)
	Assembly nut	Zinc die-cast / Zinc plating (Black)
	Angle endbell	Synthetic resin
	Straight endbell	Synthetic resin
	O Ring	Synthetic rubber
	Bushing*	Synthetic rubber (Color: black/gray/brick red/dark green)
	Gland nut	Synthetic resin
	Spring	Stainless steel
	Spring pin	Stainless steel
Socket contact	Copper alloy / Au plating (10 pin), Silver plating (4 pin)	
Waterproof Cap	Cap	Synthetic rubber

\*Color of bushing is determined by applicable wire size.

Color of Bushing	Applicable Cable
Gray	6.5 to 8.0 Dia.
Black	5.7 to 7.3 Dia.
Dark Green	4.7 to 5.7 Dia.
Brick Red	3.5 to 5.0 Dia.

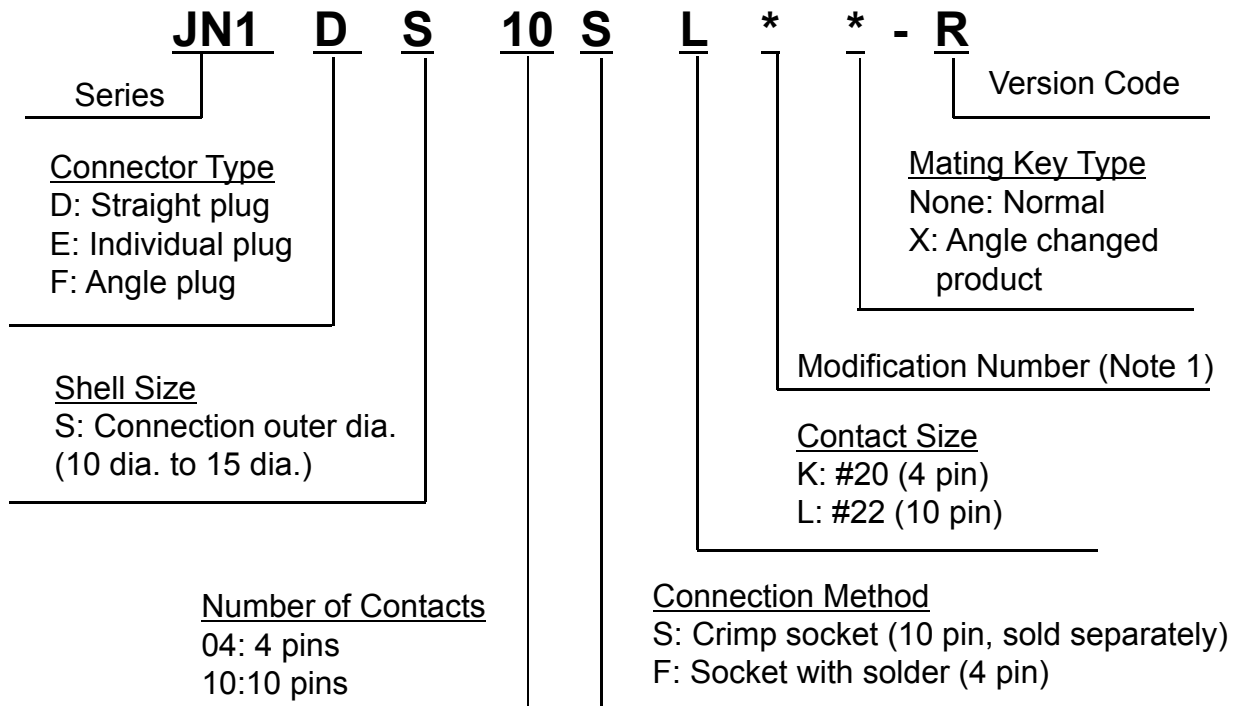
Ordering Information

**[JN1]**  
Receptacle



Note 1: Please refer to product drawings for Modification Number.

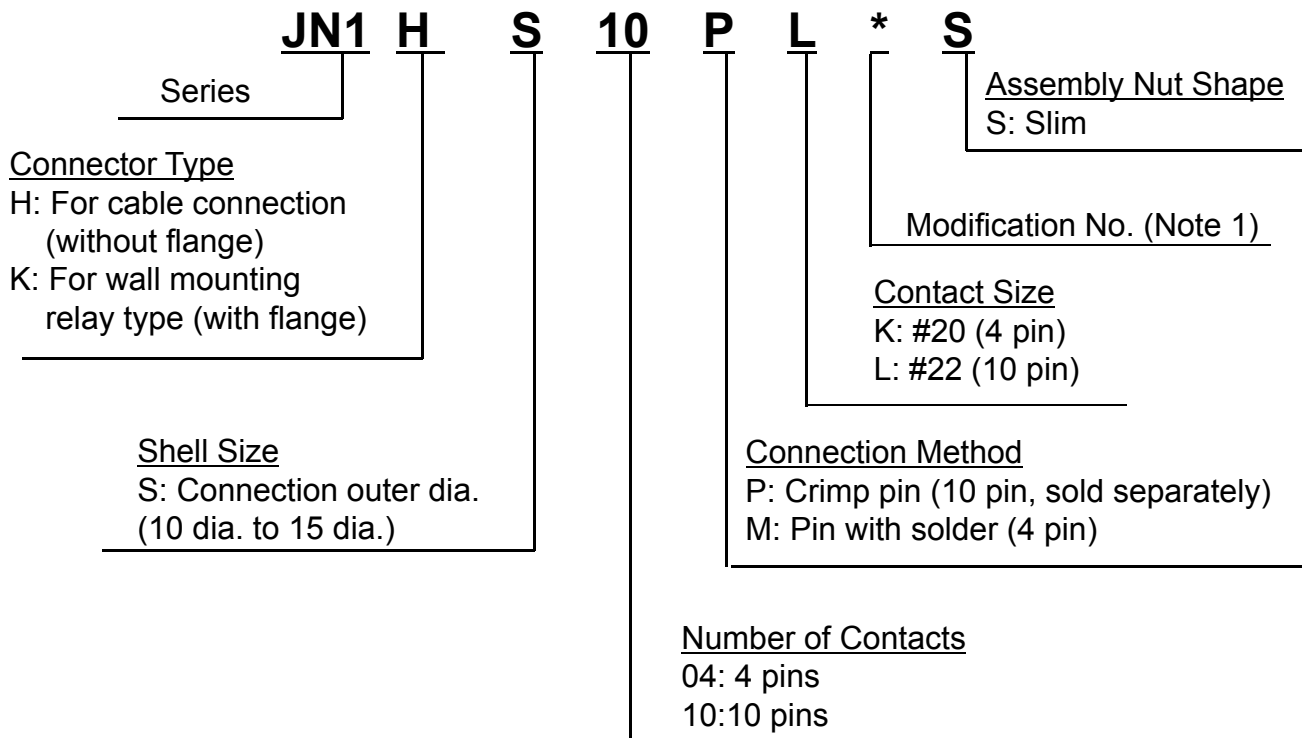
**[JN1]**  
Plug



Note 1: Please refer to product drawings for Modification Number.

**[JN1]**

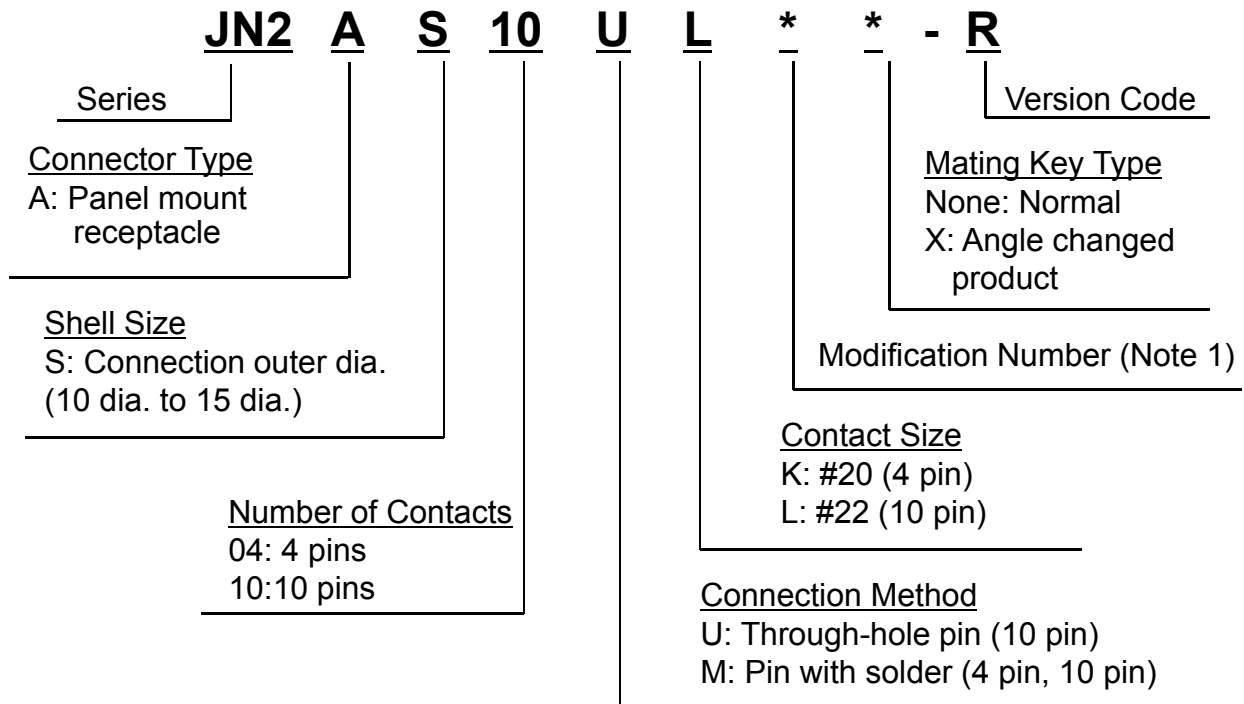
**Cable Connecting Receptacle**



Note 1: Please refer to product drawings for Modification Number.

**[JN2]**

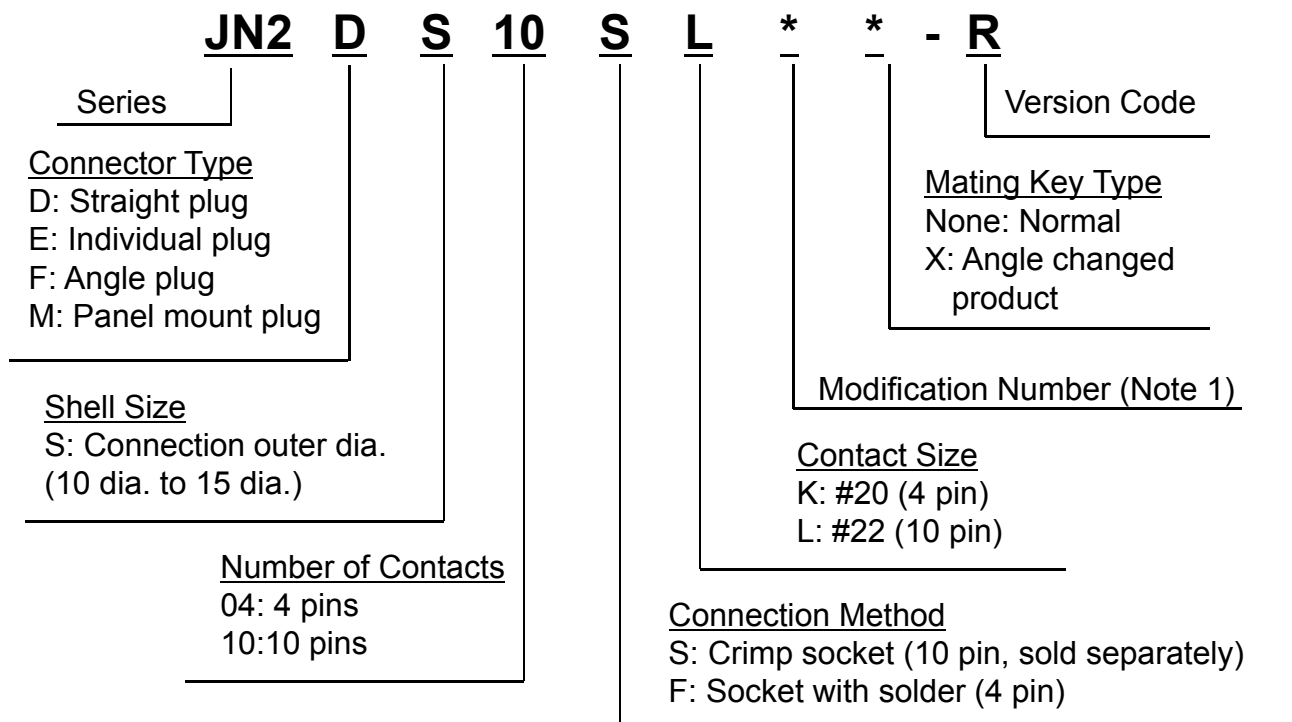
Receptacle



Note 1: Please refer to product drawings for Modification Number.

**[JN2]**

Plug



Note 1: Please refer to product drawings for Modification Number.



## ■ Part Number List

Series	No. of Contacts	Connector Type	Part Number	Drawing Number	Performance / Shape
JN1	4	Square Flange Receptacle	JN1AS04MK1	SJ035649	Individually waterproofed, solder pin
			JN1AS04MK1X	SJ035649	Individually waterproofed, solder pin, X position
		Cable Connecting Receptacle	JN1HS04MK1-R	SJ105206	Waterproof (when mated), solder pin, cable dia. 5.7 to 7.3
			JN1HS04MK2-R	SJ105206	Waterproof (when mated), solder pin, cable dia. 6.5 to 8.0
			JN1HS04MK4S	SJ105841	Waterproof (when mated), solder pin, cable dia. 4.7 to 5.7, Outer diameter: 20 dia. max.
			JN1HS04MKKS	SJ107658	Waterproof (when mated), solder pin, cable dia. 20 max., kit type (with four types of rubber bushing)
		Wall Mount Receptacle	JN1KS04MK1-R	SJ105207	Waterproof (when mated), solder pin, cable dia. 5.7 to 7.3
			JN1KS04MK2-R	SJ105207	Waterproof (when mated), solder pin, cable dia. 6.5 to 8.0
		Straight Plug	JN1DS04FK1	SJ035666	Waterproof (when mated), solder socket cable dia. 5.7 to 7.3
			JN1DS04FK1X	SJ035666	Waterproof (when mated), solder socket cable dia. 5.7 to 7.3, X position
			JN1DS04FK2	SJ035666	Waterproof (when mated), solder socket cable dia. 6.5 to 8.0
			JN1DS04FK2X	SJ035666	Waterproof (when mated), solder socket cable dia. 6.5 to 8.0, X position
			JN1DS04FKK	SJ035969	Waterproof (when mated), solder socket kit type (with two types of rubber bushing)
			JN1DS04FKKX	SJ035969	Waterproof (when mated), solder socket kit type (with two types of rubber bushing), X position
			JN1DS04FKB	SJ037181	Waterproof (when mated), solder socket, individual wire type
			90 Degree Angle Plug	JN1FS04FK1	SJ035610
		JN1FS04FK1X		SJ035610	Waterproof (when mated), solder socket cable dia. 5.7 to 7.3, X position
		JN1FS04FK2		SJ035610	Waterproof (when mated), solder socket cable dia. 6.5 to 8.0
		JN1FS04FK2X		SJ035610	Waterproof (when mated), solder socket cable dia. 6.5 to 8.0, X position
		JN1FS04FKK		SJ035968	Waterproof (when mated), solder socket kit type (with two types of rubber bushing)
		JN1FS04FKKX		SJ035968	Waterproof (when mated), solder socket kit type (with two types of rubber bushing), X position
		Waterproof Cap	J025-52209-RK	SJ119896	JN1, 2 Receptacle (4, 10 pins) for waterproof, IP67

Series	No. of Contacts	Connector Type	Part Number	Drawing Number	Performance / Shape
JN1	10	Rectangular Flange Receptacle	JN1AS10UL1	SJ034676	Waterproof (when mated), through-hole pin
		Square Flange Receptacle	JN1AS10ML1-R	SJ105743	Waterproof (when mated), solder pin
			JN1AS10ML2-R	SJ105745	Individually waterproofed, solder pin
		Cable Connecting Receptacle	JN1HS10PL1	SJ037293	Waterproof (when mated), crimp pin (sold separately), cable dia. 5.7 to 7.3
			JN1HS10PL2	SJ037293	Waterproof (when mated), crimp pin (sold separately), cable dia. 6.5 to 8.0
			JN1HS10PL3	SJ037293	Waterproof (when mated), crimp pin (sold separately), cable dia. 3.5 to 5.0
			JN1HS10PL3S	SJ105842	Waterproof (when mated), crimp pin (sold separately), cable dia. 3.5 to 5.0, outer diameter: 20 dia. max.
			JN1HS10PL4S	SJ105842	Waterproof (when mated), crimp pin (sold separately), cable dia. 4.7 to 5.7, outer diameter: 20 dia. max.
			JN1HS10PLKS1	SJ107656	Waterproof (when mated), crimp pin cable dia. 5.7 to 7.3, kit type (with rubber bushing and 10 contacts)
			JN1HS10PLKS2	SJ107656	Waterproof (when mated), crimp pin cable dia. 6.5 to 8.0, kit type (with rubber bushing and 10 contacts)
			JN1HS10PLKS3	SJ107656	Waterproof (when mated), crimp pin cable dia. 3.5 to 5.0, kit type (with rubber bushing and 10 contacts)
		Wall Mount Receptacle	JN1KS10PL1	SJ037294	Waterproof (when mated), crimp pin (sold separately), cable dia. 5.7 to 7.3
			JN1KS10PL2	SJ037294	Waterproof (when mated), crimp pin (sold separately), cable dia. 6.5 to 8.0
		Individual Plug	JN1ES10SL1	SJ034677	Non-waterproof, crimp socket, individual block
		Straight Plug	JN1DS10SL1	SJ034679	Waterproof (when mated), crimp or solder socket (sold separately) cable dia. 5.7 to 7.3
			JN1DS10SL2	SJ034679	Waterproof (when mated), crimp or solder socket (sold separately) cable dia. 6.5 to 8.0
			JN1DS10SL3	SJ034679	Waterproof (when mated), crimp or solder socket (sold separately) cable dia. 3.5 to 5.0
			JN1DS10SLK	SJ035967	Waterproof (when mated), crimp socket, kit type (with 10 contacts and two types of rubber bushing)
		90 Degree Angle Plug	JN1FS10SL1	SJ034678	Waterproof (when mated), crimp or solder socket (sold separately) cable dia. 5.7 to 7.3
			JN1FS10SL2	SJ034678	Waterproof (when mated), crimp or solder socket (sold separately) cable dia. 6.5 to 8.0
			JN1FS10SLK	SJ034966	Waterproof (when mated), crimp socket, kit type (with 10 contacts and two types of rubber bushing)
		Waterproof Cap	J025-52209-RK	SJ119896	JN1, 2 Receptacle (4, 10 pins) for waterproof, IP67

Series	No. of Contacts	Contact Type	Contact Termination	Packaging	Part Number	Drawing Number	Performance / Shape
JN1 JN2	10	Socket Contact	Crimp	In pieces (100pcs.)	JN1-22-20S-R-PKG100	SJ035503	20-21AWG Outer Dia. 1.5 max.
					JN1-22-22S-PKG100	SJ035503	21-25AWG Outer Dia. 1.5 max.
					JN1-22-26S-PKG100	SJ035503	26-28AWG Outer Dia. 1.1 max.
				In reels (10,000 pcs.)	JN1-22-20S-R-10000	SJ035504	20-21AWG Outer Dia. 1.5 max.
					JN1-22-22S-10000	SJ035504	21-25AWG Outer Dia. 1.5 max.
					JN1-22-26S-10000	SJ035504	26-28AWG Outer Dia. 1.1 max.
			Solder	In pieces	JN1-22-22F-PKG100	SJ109855	In pieces(100pcs.), AWG#20 max. Outer Dia. 1.5 max.
					JN1-22-22F-PKG10	SJ109855	In pieces(10pcs.), 20AWG max. Outer Dia. 1.5 max.
					Pin Contact	Crimp	In pieces (100pcs.)
		JN1-22-22P-PKG100	SJ037430	21-25AWG Outer Dia. 1.5 max.			
		JN1-22-26P-PKG100	SJ037430	26-28AWG Outer Dia. 1.1 max.			
		In reels (10,000 pcs.)	JN1-22-20P-R-10000	SJ037431		20-21AWG Outer Dia. 1.5 max.	
			JN1-22-22P-10000	SJ037431		21-25AWG Outer Dia. 1.5 max.	
			JN1-22-26P-10000	SJ037431		26-28AWG Outer Dia. 1.1 max.	

\* JN2 and JN1 utilizes common contact.

\* Contact extraction tool (Part Number: ET-JN1) is available.

Please refer to the connector handling instructions concerning contact extraction.

## ■ Part Number List

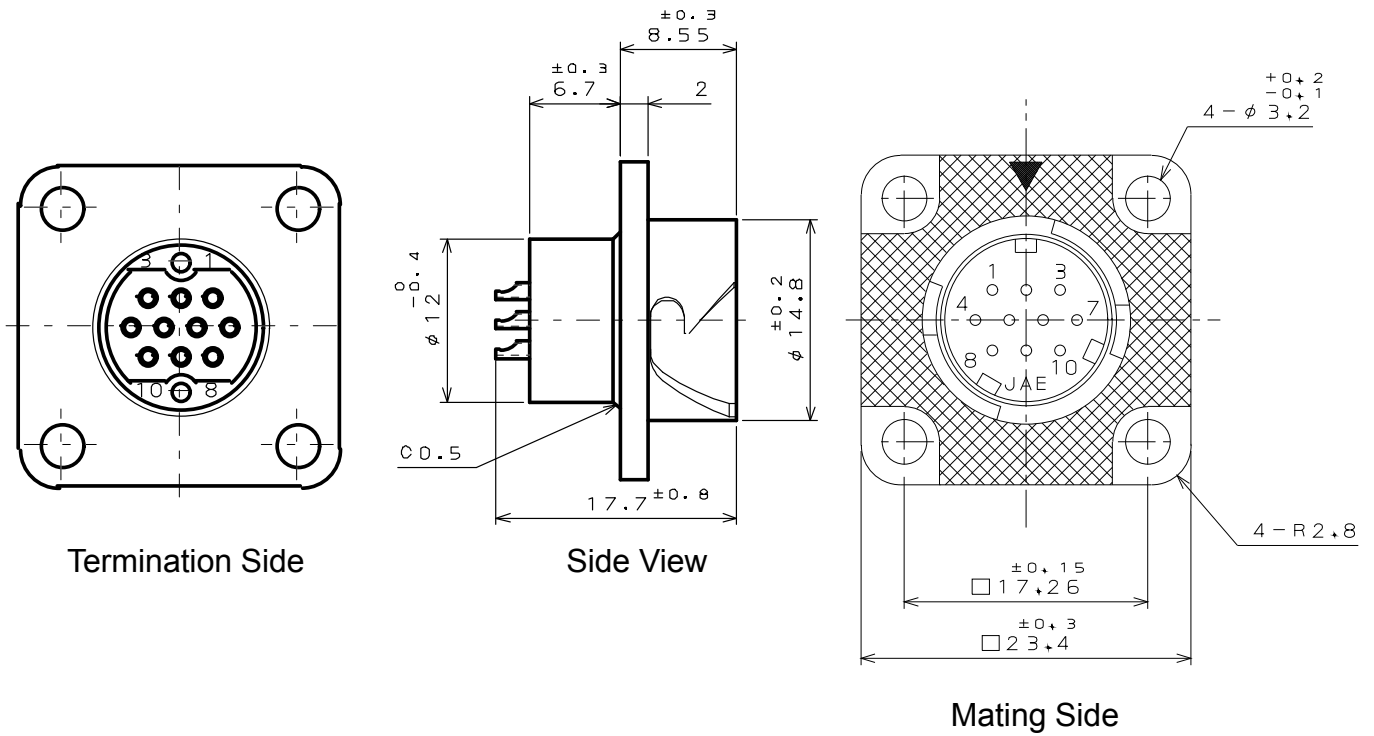
Series	No. of Contacts	Connector Type	Part Number	Drawing Number	Performance / Shape	
JN2	4	Square Flange Receptacle	JN2AS04MK2-R	SJ105530	Individually waterproofed, solder pin, body earth structure	
			JN2AS04MK2X-R	SJ105530	Individually waterproofed, solder pin, body earth structure, X position	
		Straight Plug	JN2DS04FK1-R	SJ105532	Waterproof (when mated), solder socket, cable dia. 5.7 to 7.3	
			JN2DS04FK1X-R	SJ105532	Waterproof (when mated), solder socket, cable dia. 5.7 to 7.3, X position	
			JN2DS04FK2-R	SJ105532	Waterproof (when mated), solder socket, cable dia. 6.5 to 8.0	
			JN2DS04FK2X-R	SJ105532	Waterproof (when mated), solder socket, cable dia. 6.5 to 8.0, X position	
			JN2DS04FKK-R	SJ105536	Waterproof (when mated), solder socket, kit type (with two types of rubber bushing)	
			JN2DS04FKKX-R	SJ105536	Waterproof (when mated), solder socket, kit type (with two types of rubber bushing), X position	
			Angle Plug	JN2FS04FK1X-R	SJ105531	Waterproof (when mated), solder socket, cable dia. 5.7 to 7.3
		JN2FS04FK1X-R		SJ105531	Waterproof (when mated), solder socket, cable dia. 5.7 to 7.3, X position	
		JN2FS04FK2-R		SJ105531	Waterproof (when mated), solder socket, cable dia. 6.5 to 8.0	
		JN2FS04FK2X-R		SJ105531	Waterproof (when mated), solder socket, cable dia. 6.5 to 8.0, X position	
		JN2FS04FKK-R		SJ105535	Waterproof (when mated), solder socket, kit type (with two types of rubber bushing)	
		JN2FS04FKKX-R		SJ105535	Waterproof (when mated), solder socket, kit type (with two types of rubber bushing), X position	
			Waterproof Cap	J025-52209-RK	SJ119896	JN1, 2 Receptacle (4, 10 pins) for waterproof, IP67

Series	No. of Contacts	Connector Type	Part Number	Drawing Number	Performance / Shape
JN2	10	Square Flange Receptacle	JN2AS10ML1-R	SJ105537	Waterproof (when mated), solder pin
			JN2AS10ML2-R	SJ105538	Individually waterproofed, solder pin
		Panel Mount Plug	JN2MS10SL1-R	SJ105544	Waterproof (when mated), crimp or solder socket (sold separately)
			JN2MS10SLK-R	SJ105996	Waterproof (when mated), crimp socket kit type (with 10 contacts)
		Rectangular Flange Receptacle	JN2AS10UL1-R	SJ105527	Waterproof (when mated), through-hole pin
		Straight Plug	JN2DS10SL1-R	SJ105529	Waterproof (when mated), crimp or solder socket (sold separately), cable dia. 5.7 to 7.3
			JN2DS10SL2-R	SJ105529	Waterproof (when mated), crimp or solder socket (sold separately), cable dia. 6.5 to 8.0
			JN2DS10SL3-R	SJ105529	Waterproof (when mated), crimp or solder socket (sold separately), cable dia. 3.5 to 5.0
			JN2DS10SLN-R	SJ105529	Waterproof (when mated), crimp or solder socket (sold separately), without bushing Note*
			JN2DS10SLK-R	SJ105534	Waterproof (when mated), crimp socket, kit type (with 10 contacts and two types of rubber bushing)
		Angle Plug	JN2FS10SL1-R	SJ105528	Waterproof (when mated), crimp or solder socket (sold separately), cable dia. 5.7 to 7.3
			JN2FS10SL2-R	SJ105528	Waterproof (when mated), crimp or solder socket (sold separately), cable dia. 6.5 to 8.0
			JN2FS10SL3-R	SJ105528	Waterproof (when mated), crimp or solder socket (sold separately), cable dia. 3.5 to 5.0
			JN2FS10SLN-R	SJ105528	Waterproof (when mated), crimp or solder socket (sold separately), without bushing
			JN2FS10SLK-R	SJ105533	Waterproof (when mated), crimp socket, kit type (with 10 contacts and two types of rubber bushing)
		Waterproof Cap	J025-52209-RK	SJ119896	JN1, 2 Receptacle (4, 10 pins.) for waterproof, IP67

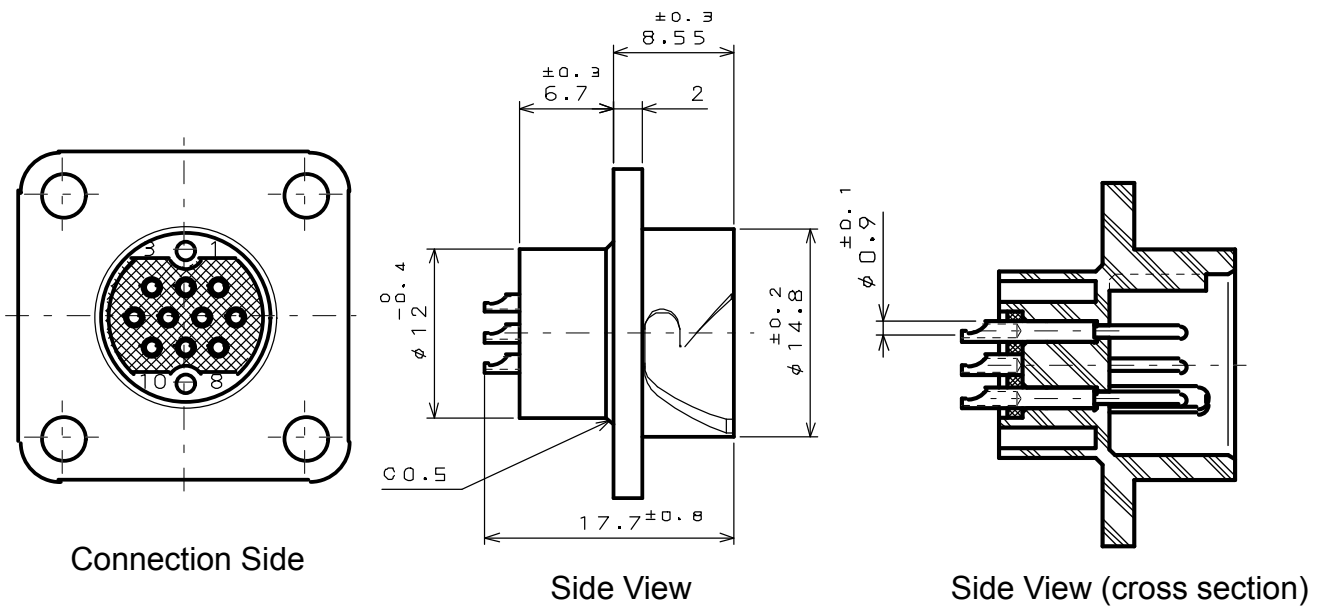
\* Please contact us when considering size of bushing to use.



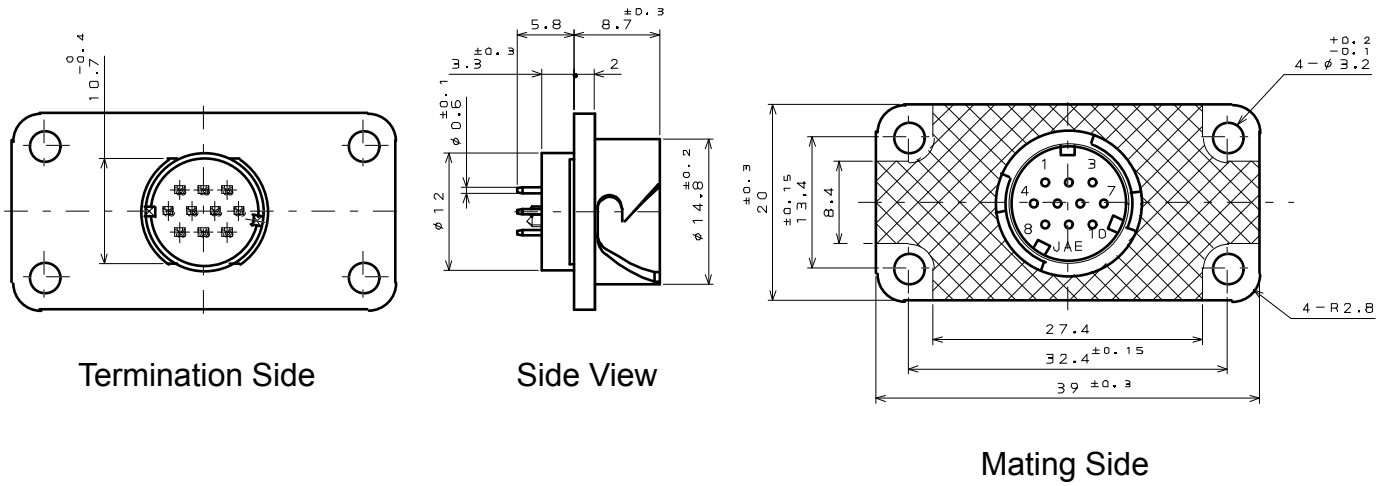
■ Receptacle JN1AS10ML1-R



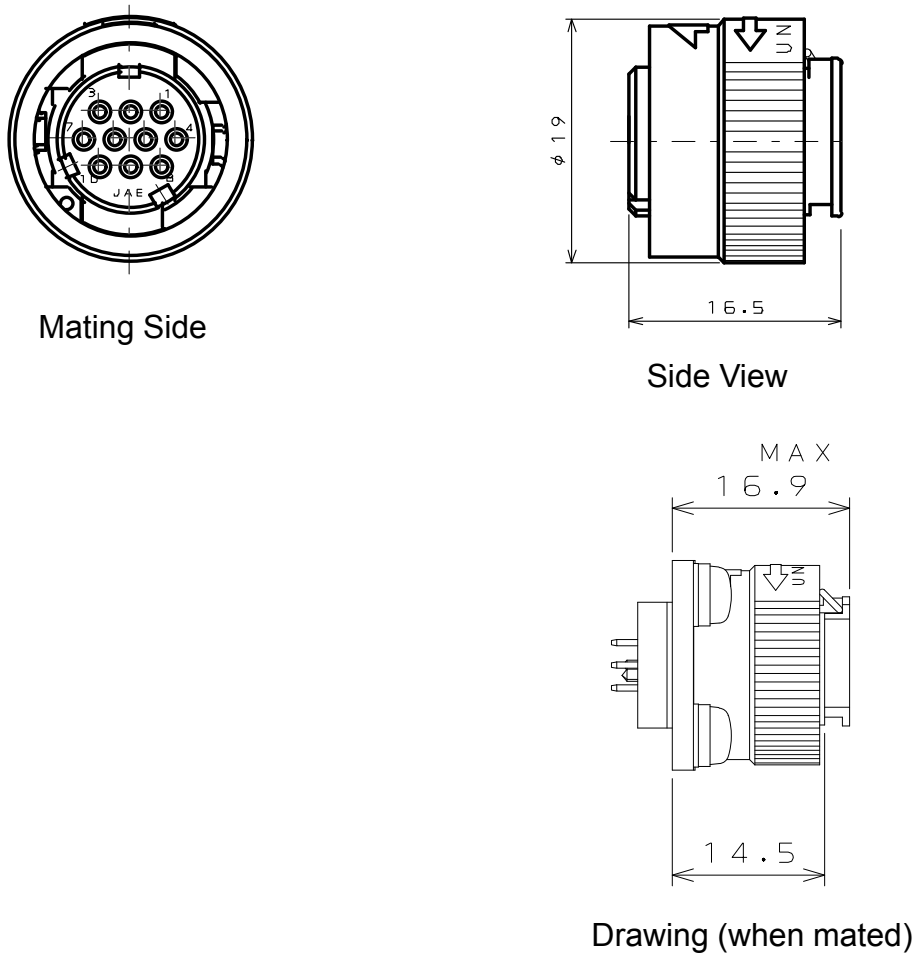
■ Receptacle JN1AS10ML2-R



■ Receptacle JN1AS10UL1

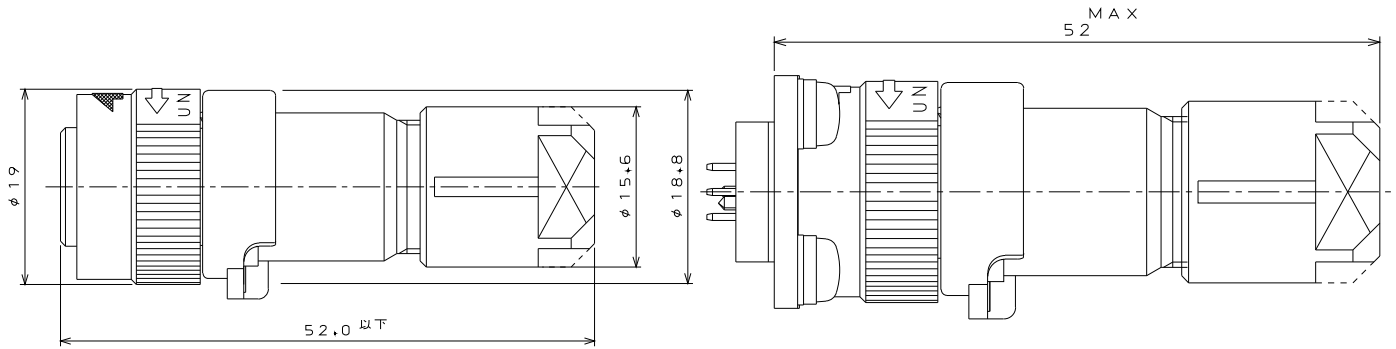


■ Individual Plug JN1ES10SL1



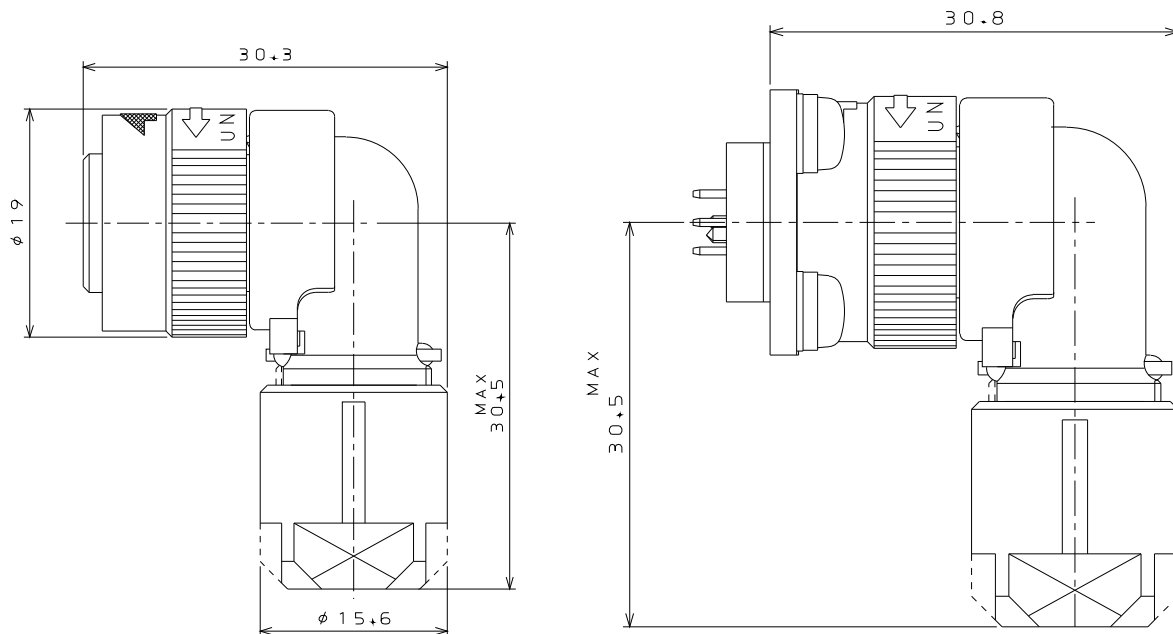


■ Straight Plug JN1DS10SL\*  
JN1DS04FK\*\*



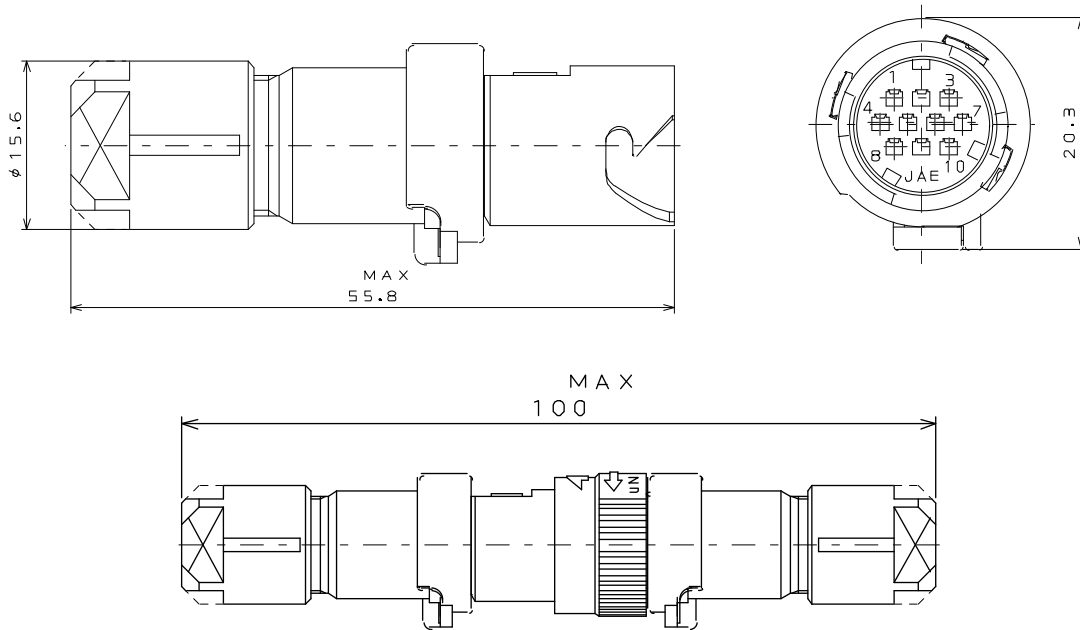
Drawing (when mated)

■ Angle Plug JN1FS10SL\*  
JN1FS04FK\*\*



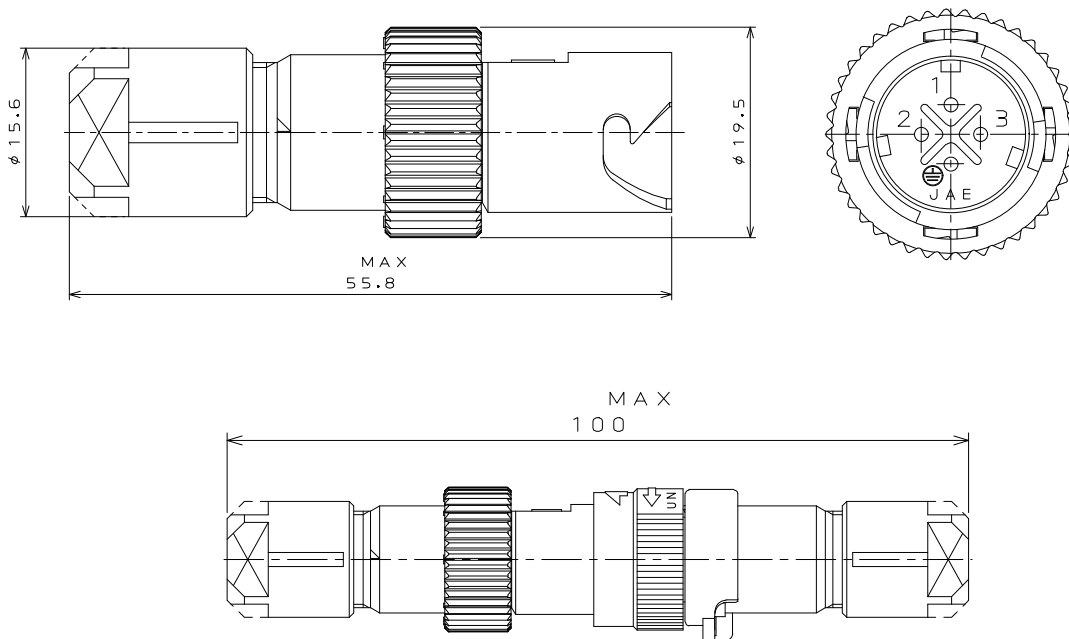
Drawing (when mated)

■ Cable Connecting Receptacle JN1HS04MK\*-R  
JN1HS10PL\*



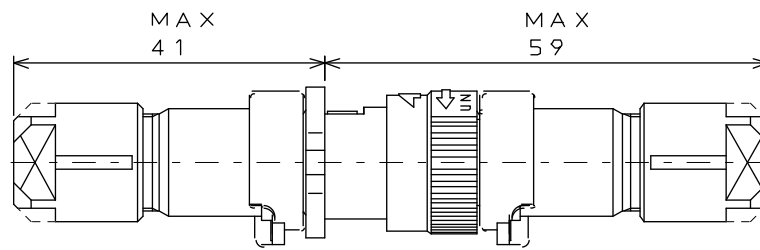
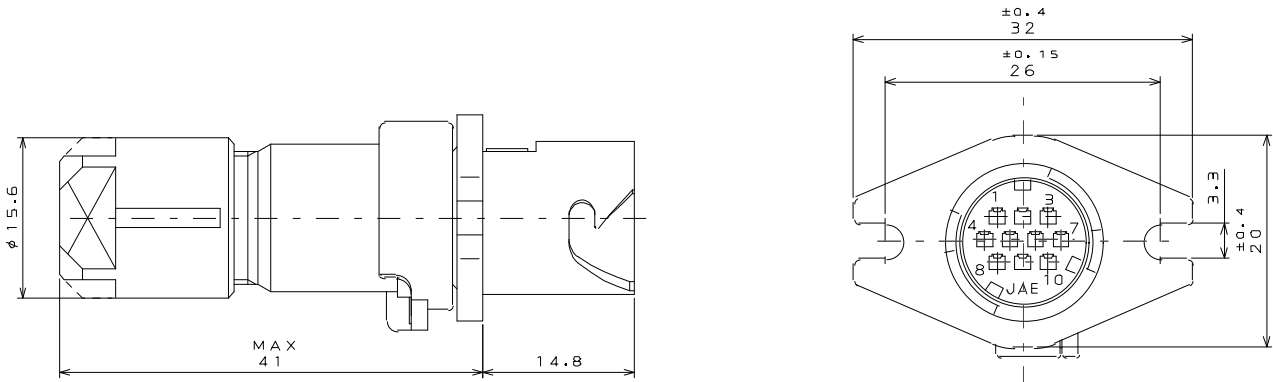
Drawing (when mated)

■ Cable Connecting Receptacle JN1HS04MK\*S  
(Slim Outer Diameter Type) JN1HS10PL\*S



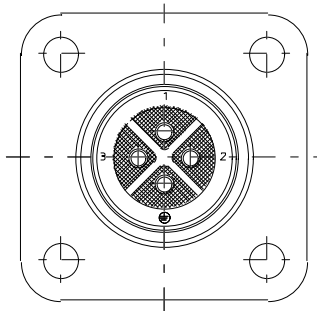
Drawing (when mated)

■ Wall Mounting Receptacle JN1KS04MK\*-R  
JN1KS10PL\*

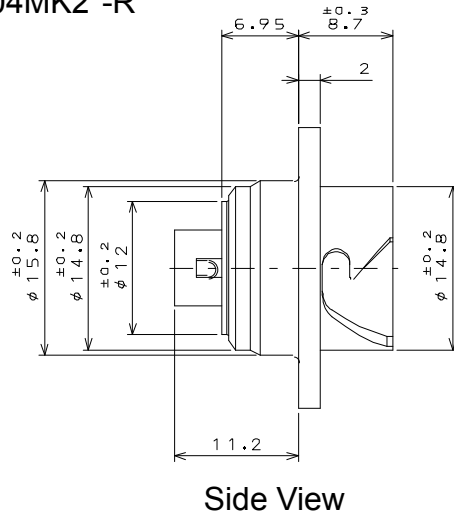


Drawing (when mated)

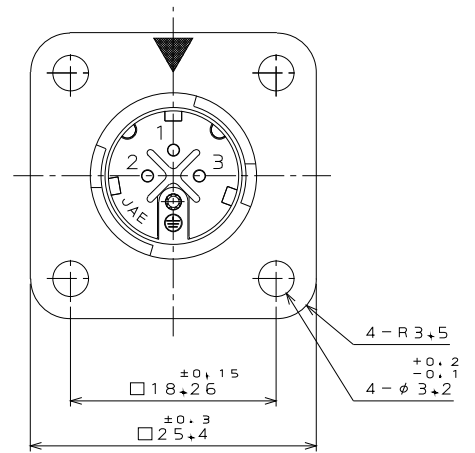
■ Receptacle JN2AS04MK2\*-R



Termination Side

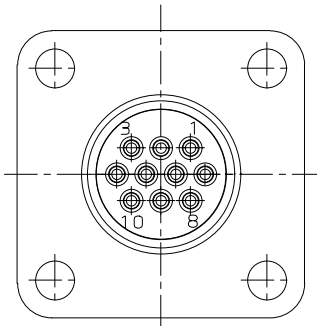


Side View

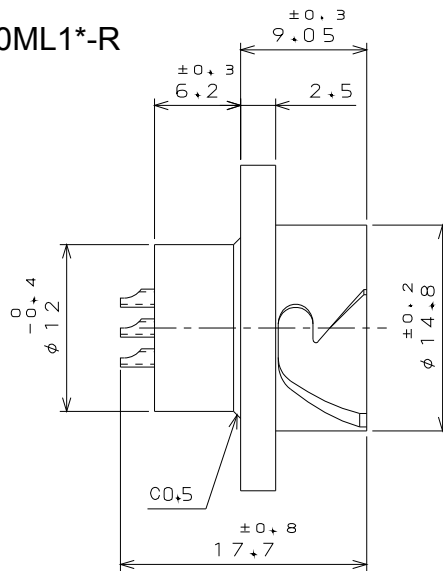


Mating Side

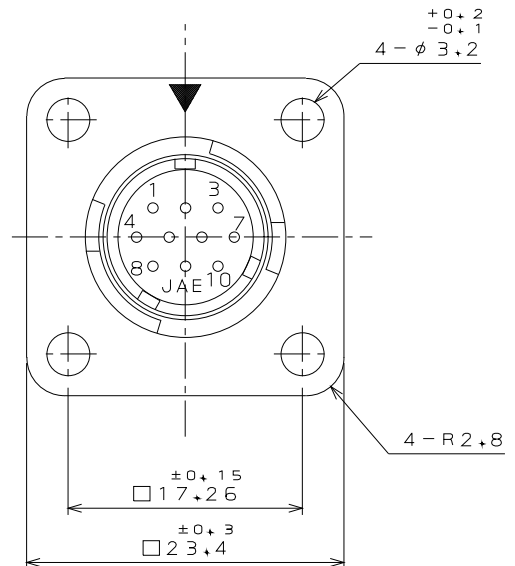
■ Receptacle JN2AS10ML1\*-R



Termination Side

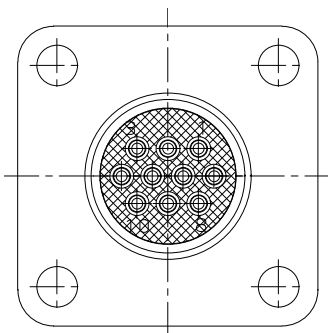


Side View

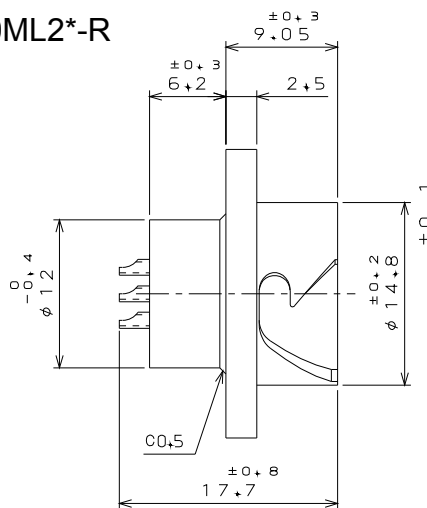


Mating Side

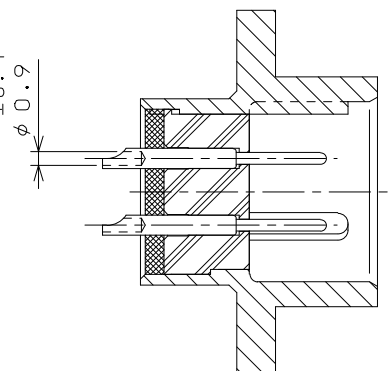
■ Receptacle JN2AS10ML2\*-R



Termination Side

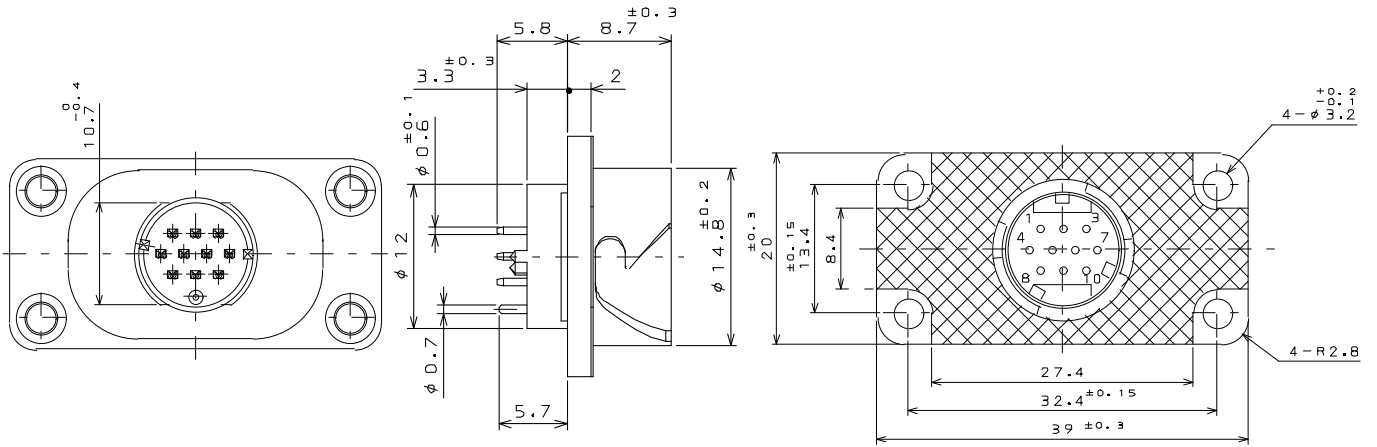


Side View



Side View (cross section)

■ Receptacle JN2AS10UL1-R

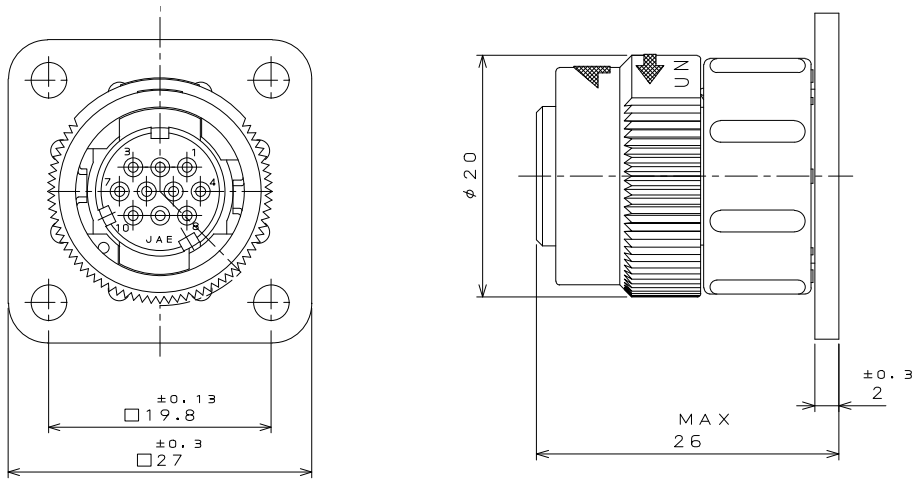


Termination Side

Side View

Mating Side

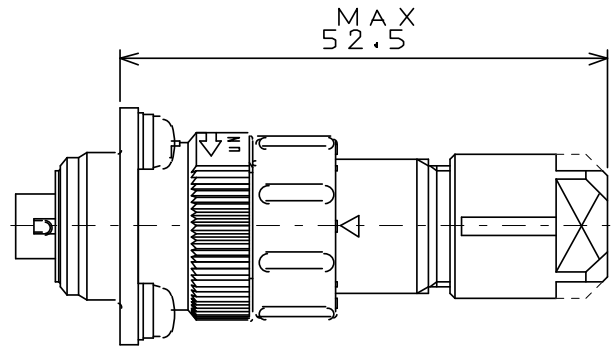
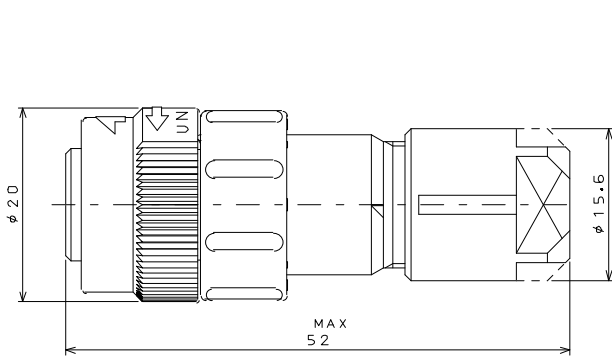
■ Panel Mount Plug JN2MS10SL\*-R



Mating Side

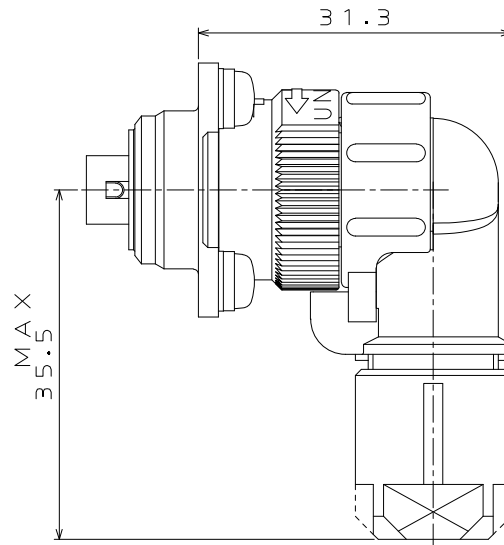
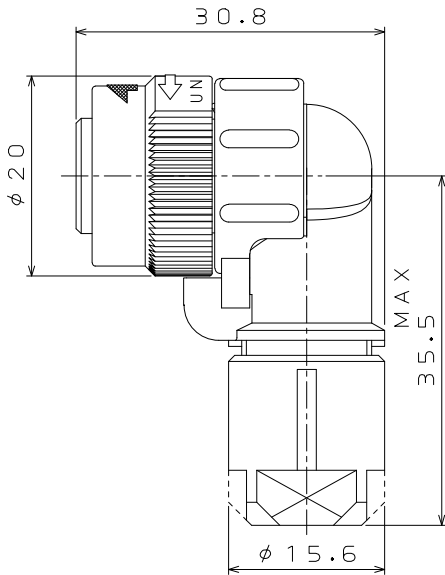
Side View

■ Straight Plug JN2DS04FK\*\*-R  
JN2DS10SL\*-R



Drawing (when mated)

■ Angle Plug JN2FS04FK\*\*-R  
JN2FS10SL\*-R



Drawing (when mated)

## Crimp Contact Part Number and Applicable Wires and Tooling

Type of Tool	Instruction Manual for Tooling	Applicable Tooling	Applicable Wire	Outer Diameter	Part Number of Applicable Contact (Note 1)
Hand crimp (for contacts in pieces)	T700253	CT150-2-JN1-D	20, 21AWG	Dia. 1.3 to 1.5	JN1-22-20*-R-PKG100
			25AWG	Dia. 0.8 to 1.0	JN1-22-22*-PKG100
		CT150-2-JN1-E	21, 23AWG	Dia. 1.0 to 1.5	JN1-22-22*-PKG100
			25AWG	Dia. 0.8 to 1.0	
	T700238	CT150-2-JN1-B	22, 24AWG	Dia. 1.0 to 1.3	JN1-22-22*-PKG100
			26, 28AWG	Dia. 0.8 to 1.0	JN1-22-26*-PKG100
Semi-Automatic crimp (for contacts in reels)	T703294	350-JN1-2C (Old model) Note 3	20 to 28AWG	Dia. 0.8 to 1.5	JN1-22-20*-R-10000 JN1-22-22*-10000 JN1-22-26*-10000
	T703413	3502-JN1-2C (New model)			

Note 1: The \* in the part number will stand for P: Pin contact, S: Socket contact.

Note 2: Contact extraction tool (Part Number: ET-JN1) is available.

Please refer to the connector handling instructions concerning removal.

Note 3: Please contact us concerning connection tool, contact removal tool and the RoHS compliance of tools for the JN1 and 2 series.

Note 4: Part number for new model is 3502-JN1-2C.

Please note that production of the old model was end of life in March 2009.

#### ■ Suggested Conduit

	Model
Neoflex	RQJN-M13-9, RQJN-M13-16
Daiwa Dengyo	PCJN-12-M13F
Sankei Seisakusho	N2KY16-FN3

Please consult with conduit manufacturer regarding use of each conduit.

**Notice:**

1. The values specified in this brochure are only for reference. The products and their specifications are subject to change without notice. Contact our sales staff for further information before considering or ordering any of our products. For purchase, a product specification must be agreed upon.

2. Users are requested to provide protection circuits and redundancy circuits to ensure safety of the equipment, and sufficiently review the suitability of JAE's products to the equipment.

3. The products presented in this brochure are designed for the uses recommended below. We strongly suggest you contact our sales staff when considering use of any of the products in any other way than the recommended applications or for a specific use that requires an extremely high reliability.

(1) Applications that require consultation:

(i) Please contact us if you are considering use involving a quality assurance program that you specify or that is peculiar to the industry, such as:

Automotive electrical components, train control, telecommunications devices (mainline), traffic light control, electric power, combustion control, fire prevention or security systems, disaster prevention equipment, etc.

(ii) We may separately give you our support with a quality assurance program that you specify, when you think of a use such as :

Aviation or space equipment, submarine repeaters, nuclear power control systems, medical equipment for life support, etc.

(2) Recommended applications include:

Computers, office appliances, telecommunications devices (terminals, mobile units), measuring equipment, audiovisual equipment, home electric appliances, factory automation equipment, etc.

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\* The specifications in this brochure are subject to change without notice. Please contact JAE for information.