

**VG95234 Qualified Circular Waterproof**  
One-touch Bayonet Locking System / Crimp Termination

CONNECTOR  
MB-0351-2  
May 2020

## JK06 Data Transmission Connector

**RoHS Compliant**



Ethernet, TCN, or high density data transmission network have become key technologies for modern railway vehicles. For network systems connectors are required to comply with data transmission standards, as while requiring the connectors to be waterproof and providing railway vehicle grade robustness.

The JK06 Data Transmission Connector is a railway vehicle connector that combines robustness and waterproof with a bayonet style locking mechanism compliant with VG95234 specification, while offering a unique contact arrangement and customized contacts for data transmission.

The JK06 Data Transmission Connector lineup is offered in two category of transmission standards.

## Features

- Mechanical designs are compliant with VG95234 specification
  - Bayonet style locking mechanism
  
- Compliant with the following network communication standards
  - For Cat.5
    - ISO/IEC11801 / JIS X5150 Category 5 (Cat.5), Connecting Hardware
    - ANSI/TIA/EIA-568B.2 Category 5e(Cat.5e), Connecting Hardware
  - For Cat.6A
    - ISO/IEC11801 / JIS X5150 Category 6A(Cat.6A), Connecting Hardware
    - ANSI/TIA-568B.2-10 Category 6A(Cat.6A), Connecting Hardware
  
- IP67 rated in mated condition (waterproof in 1m depth for 24hours)
  
- Function and performance are compliant with the following standards
  - European Standard: EN45545-2: 2013
  - Railway applications, fire protection on railway vehicles, requirements for fire behavior of materials and components
  
- Conduit applicable
  - Conduit applicable type enables to be assembled as a conduit harness with conduit adapter manufactured by PMA
  
- Materials selected with ecological consideration
  - Compliant with RoHS directive
  - Halogen-free plastic components

### Note:

Please refer to the standard catalogue, MB-0285-\*, for product lineup of general signal and high current use JK06 Series .

(\*: document revision number)

<b>General Specifications</b>
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	Item	Defined Value	
		For Cat.5	For Cat.6A
Transmission Characteristics	Return Loss	Compliant with ISO/IEC 11801 / JIS X 5150 Category 5(Cat.5), Connecting Hardware	Compliant with ISO/IEC 11801 / JIS X 5150 Category 6A(Cat.6A), Connecting Hardware
	Insertion Loss		
	Near-end crosstalk attenuation		
	Far-end crosstalk attenuation		
Electrical Performance	Dielectric Withstanding Voltage	A.C.1550Vrms per minute	A.C.500Vrms per minute
	Insulation Resistance	5000MΩ min.	1000MΩ min.

Environmental Resistance	Item	Meets Function and Performance of the following test conditions
	High-temperature High-humidity Test	Temperature: 40 Deg. C Relative humidity: 95% Applied period of time: 21 days
	Sine Wave Vibration	Frequency: 10 ~ 100Hz Acceleration: 19.6m/s <sup>2</sup> Duration: 15 minutes / cycle (10→100→10Hz) 2 hours for each axis, 4 hours total
	Vibration Durability	Random vibration, applied to each axis for 5h x 3 axis Acceleration of Vertical vibration: 7.9m/s <sup>2</sup> Horizontal vibration: 3.5m/s <sup>2</sup> Longitudinal vibration: 5.5m/s <sup>2</sup>
	Waterproof (When mated)	IP67 min.
	Heat Shock (Heat Cycle)	Temperature range: -40 Deg. C ~ +100 Deg. C, 5cycles
	Mating Durability	Mating cycles: 500 times
	Corrosion (Salt spray)	Saltwater concentration: 5% Test tank temperature: 35 Deg. C Exposure time: 500h
	Shock Resistance	Impact strength: 294m/s <sup>2</sup> Semi-sine wave 18ms
	High Temperature Resistance	Temperature: 125 Deg. C Exposure time: 96h
	Ozone Resistance	Concentration: 200 ± 20pphm Exposure time: 24h

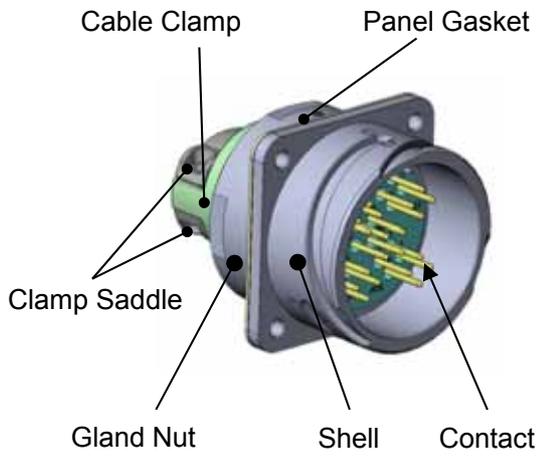
· Please refer to the documents below for specification and handling instructions.

Specifications	JACS-50103
Handling Instructions	J AHL-50103-1 (for Cat.5)
	J AHL-50103-2 (for Cat.6A)

Components

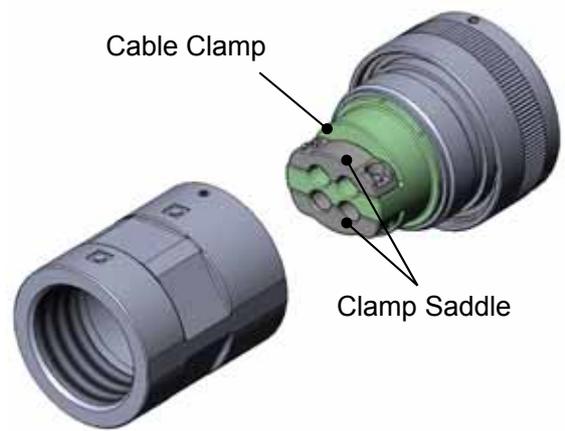
Receptacle (for Cat.5)

Panel Mount type



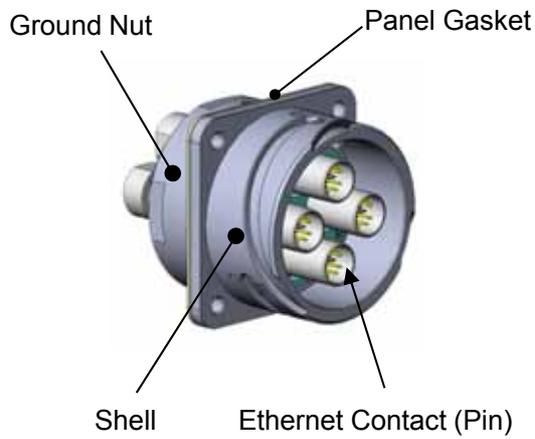
Plug (for Cat.5)

Conduit Compatible

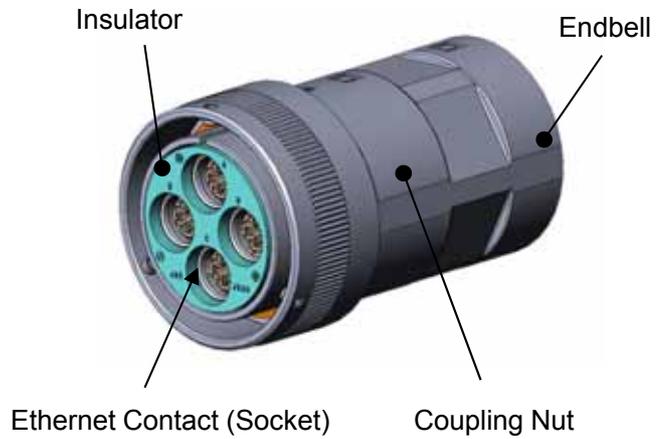


Components

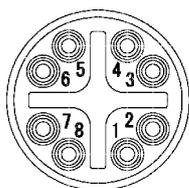
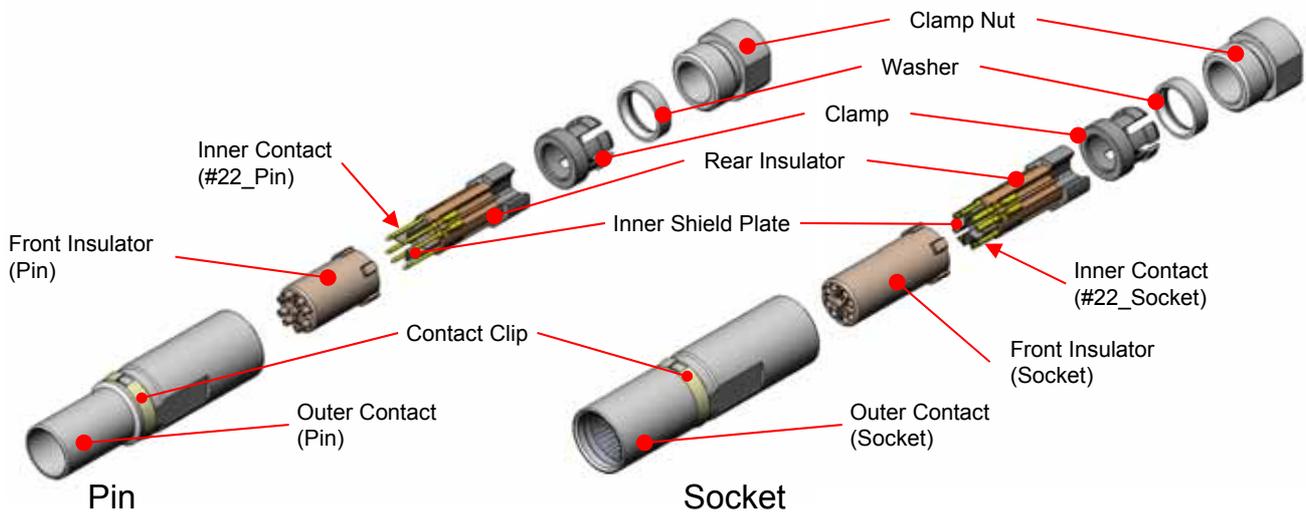
Receptacle (for Cat.6A)  
Panel Mount type



Plug (for Cat.6A)  
Conduit Compatible

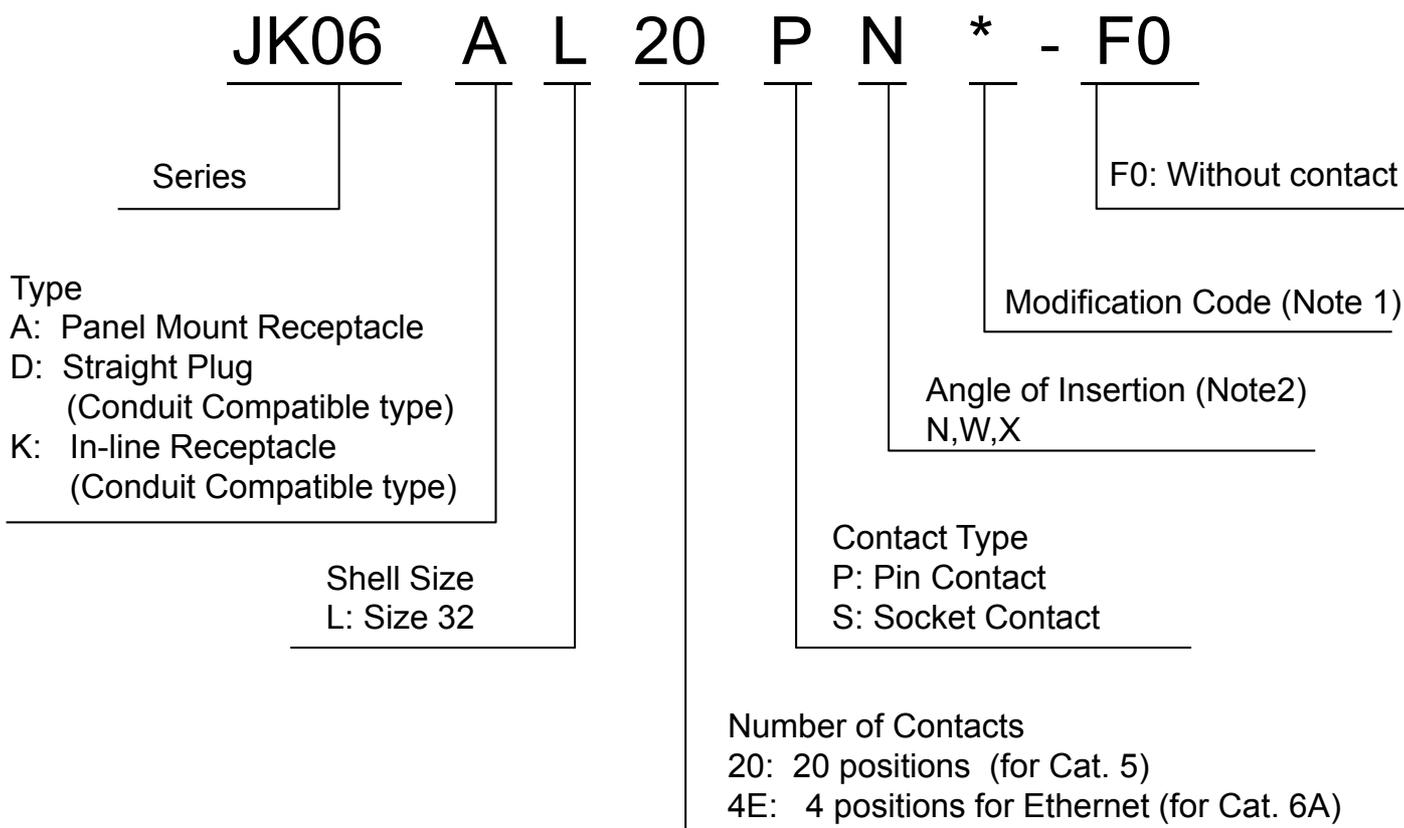


Ethernet Contact (for Cat.6A)



Ethernet Contact  
Inner Contact Arrangement (Pin side)

Ordering Information



Note1: The modification code is an alphanumeric character indicating product specifications. For more information please refer to product drawings or Ordering Information section of this document.

Products with Modification Code ending with “-F0” are supplied as connector housing only and contacts are required to be sourced separately.

For further information please refer to the Applicable Contacts section on page 9.

Note 2: Insert orientation angle will depend on contact arrangement. Please refer to the drawing of each product for specific details.

Materials and Finishes

Main Components	Material and Finish
Insulator	Synthetic plastic
Shell, coupling nut, endbell, gland nut	Aluminum alloy / Zinc plating
Grommet, panel gasket, interfacial seal	Synthetic rubber
Contact	Copper alloy / Ag plating or (Copper alloy / Au plating)
Ethernet Contact _ Inner Contact	Copper alloy / Au plating
Ethernet Contact _ Outer Contact	Zinc alloy / Nickel plating
Ethernet Contact _ Clamp, clump nut, washer	Copper alloy / Nickel plating

### Part Number List

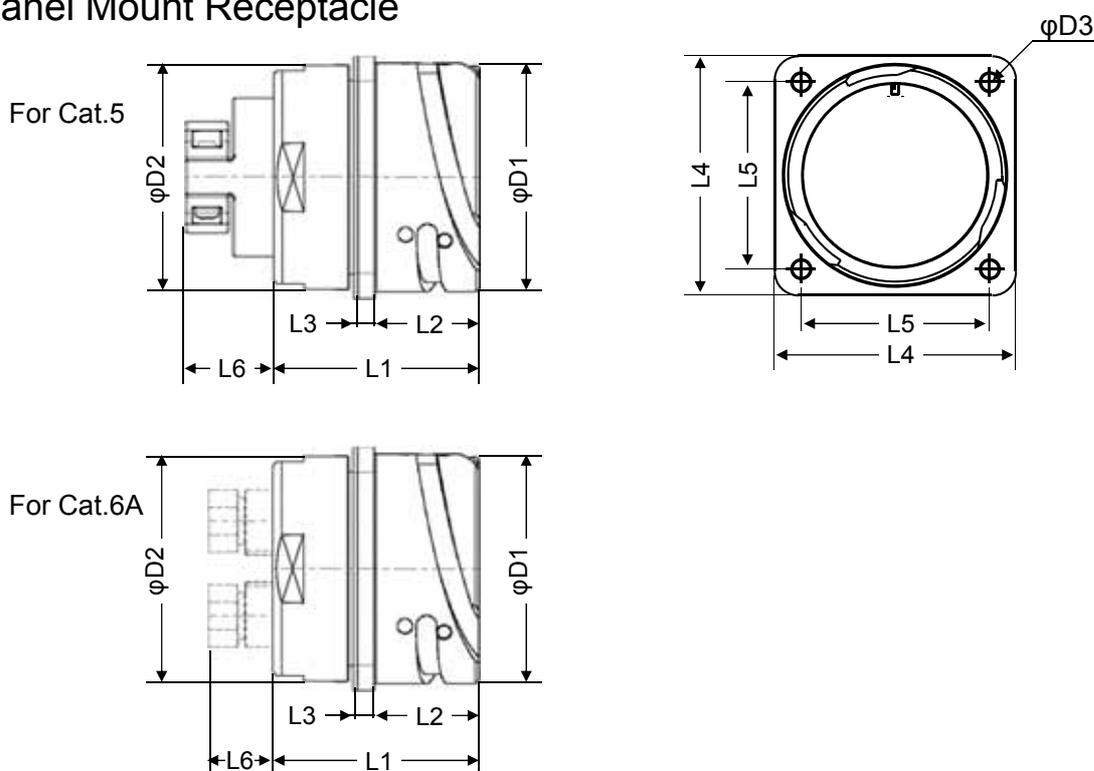
Products with the Part Number ending with “-F0” are supplied without contacts.  
For “-F0” products contacts are required to be sourced separately.

	Contact configuration	Type	Part Number (*: Orientation Angle)	Contact	Orientation Angle	Drawing Number
For Cat.5	#16 x 20 Cat.5 cable (4pos.) x 4	Panel Mount Receptacle	JK06AL20P*1-F0	Pin	N,W,X	SJ121111
		Conduit Compatible Receptacle	JK06KL20P*1-F0	Pin	N,W,X	SJ121792
		Conduit Compatible Plug	JK06DL20S*1-F0	Socket	N,W,X	SJ121793
For Cat.6A	Ethernet contact x 4 Cat.6A cable (8pos.) x 4	Panel Mount Receptacle	JK06AL4EP*1-F0	Pin	N,W,X	SJ121112
		Conduit Compatible Receptacle	JK06KL4EP*1-F0	Pin	N,W,X	SJ121794
		Conduit Compatible Plug	JK06DL4ES*1-F0	Socket	N,W,X	SJ121795

### Outer Dimension

Outer shape and dimensions are for reference only, please refer to individual drawings for further product information. (Unit: mm)

#### ■ Panel Mount Receptacle

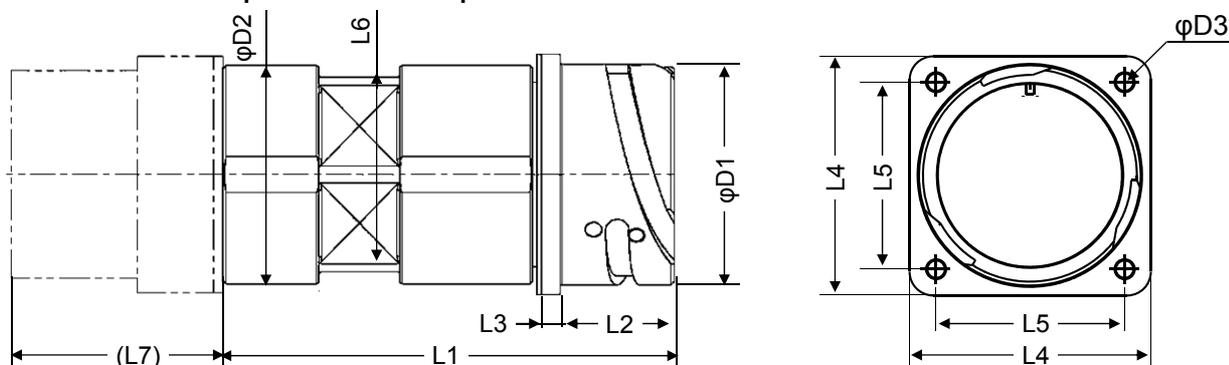


	Part Number	φD1	φD2	φD3	L1	L2	L3	L4	L5	L6
For Cat.5	JK06AL20P*1-F0	53.4	52.5	4.3	48	24.05	5	57	44.5	20
For Cat.6A	JK06AL4EP*1-F0									15

## Outer Dimension

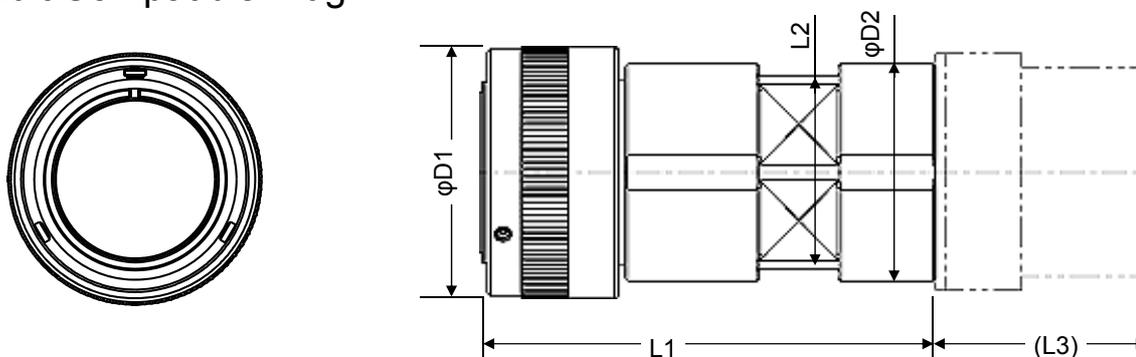
Outer shape and dimensions are for reference only, please refer to individual drawings for further product information. (Unit: mm)

### Conduit Compatible Receptacle



	Part Number	$\phi D1$	$\phi D2$	$\phi D3$	L1	L2	L3	L4	L5	L6	L7	Applicable Conduit Adapter PMA Part Number
For Cat.5	JK06KL20P*1-F0	53.4	52.7	4.3	92.6	24.05	5	57	44.5	48	60	*VNV-M406 (*:B, S)
For Cat.6A	JK06KL4EP*1-F0											*VNV-M406-8 (*:N, M) (or -13)

### Conduit Compatible Plug



Shell Size	Part Number	$\phi D1$	$\phi D2$	L1	L2	L3	Applicable Conduit Adapter PMA Part Number
For Cat.5	JK06DL20S*1-F0	59.8	52.7	93	48	60	*VNV-M406 (*:B, S)
For Cat.6A	JK06DL4ES*1-F0						*VNV-M406-8 (*:N, M) (or -13)

For conduit adapter requirement please contact PMA directly  
(URL: <https://new.abb.com/low-voltage/products/conduit-fittings/pma>)

## Applicable Contacts

### ■Crimp Contacts

Standard JK06 #16 crimp contacts are applied to Cat.5 cable.

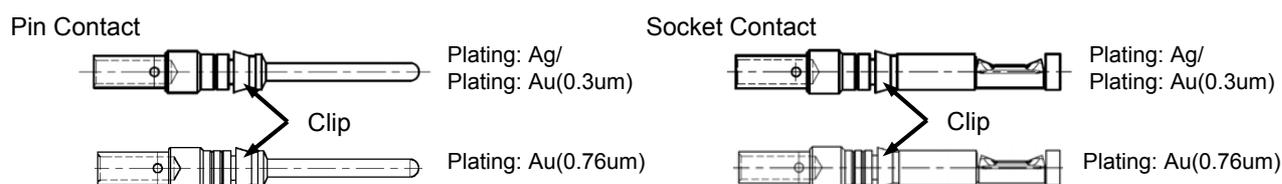
Contact Size	Applicable Conductor Cross-sectional Area	Clip Color	Plating Finishes (Thickness)	Pin Contact		Socket Contact	
				Part Number	Drawing Number	Part Number	Drawing Number
16	0.3mm <sup>2</sup> ~0.5mm <sup>2</sup> (AWG#22 ~ #20)	Red	Ag	J031-57706-PKG10	SJ118700	J031-57711-PKG10	SJ118704
			Au (0.3um)	J031-57708-PKG10	SJ118702	J031-57713-PKG10	SJ118705
			Au (0.76um)	J031-57899-PKG100	SJ120958	J031-57900-PKG100	SJ120959
	0.75mm <sup>2</sup> ~1.5mm <sup>2</sup> (AWG#18 ~ #15)	Blue	Ag	J031-57666-PKG10	SJ118699	J031-57651-PKG10	SJ118193
			Au (0.3um)	J031-57667-PKG10	SJ118283	J031-57664-PKG10	SJ118282
			Au (0.76um)	J031-57927-PKG100	SJ121539	J031-57928-PKG100	SJ121540
	1.25mm <sup>2</sup> ~2.0mm <sup>2</sup> (AWG#16 ~ #14)	White	Ag	J031-57179-PKG10	SJ115738	J031-57180-PKG10	SJ115739
			Au (0.3um)	J031-57297-PKG10	SJ115742	J031-57299-PKG10	SJ115743
			Au (0.76um)	J031-57870-PKG100	SJ120602	J031-57871-PKG100	SJ120603
	1.5mm <sup>2</sup> ~2.5mm <sup>2</sup> (AWG#15 ~ #13)	Yellow	Ag	J031-57707-PKG10	SJ118701	J031-57294-PKG10	SJ115740
			Au (0.3um)	J031-57709-PKG10	SJ118703	J031-57296-PKG10	SJ115741
	2.0mm <sup>2</sup> ~3.5mm <sup>2</sup> (AWG#14 ~ #12)	Green	Au (0.76um)	J031-57930-PKG100	SJ121541	J031-57931-PKG100	SJ121542

Note 1: Part number suffix “-PKG10” denotes ten pieces per package. (10pcs. / Unit).

Part number suffix “-PKG100” denotes ten pieces per package. (100pcs. / Unit).

Note 2: Clip Color, of the area indicated by “Clip” (arrow in the drawing below), is used to identify the applicable cable size.

Note 3: Please refer to individual product drawings for further information.



### ■Ethernet Contact (for Cat.6A)

Applicable Conductor Cross-sectional Area of Inner Contact	Plating Finishes of Inner Contact	Pin Contact		Socket Contact	
		Part Number	Drawing Number	Part Number	Drawing Number
0.2mm <sup>2</sup> ~ 0.3mm <sup>2</sup> (AWG#24 ~ #22)	Au	J031-57932	SJ121788	J031-57933	SJ121789

Note 1: Please refer to individual product drawings for further information.

Tools
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	Hand Crimp Tool	Locator	Contact Extraction Tool
For Cat.5	M22520/1-01 (for #16 Contact)	JP-GTC-16	JET-GTC-16
For Cat.6A	M22520/2-01 (for Inner Contact)	JP-JK06-1	ET-JK06-1

**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.

## **Japan Aviation Electronics Industry, Limited**

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