

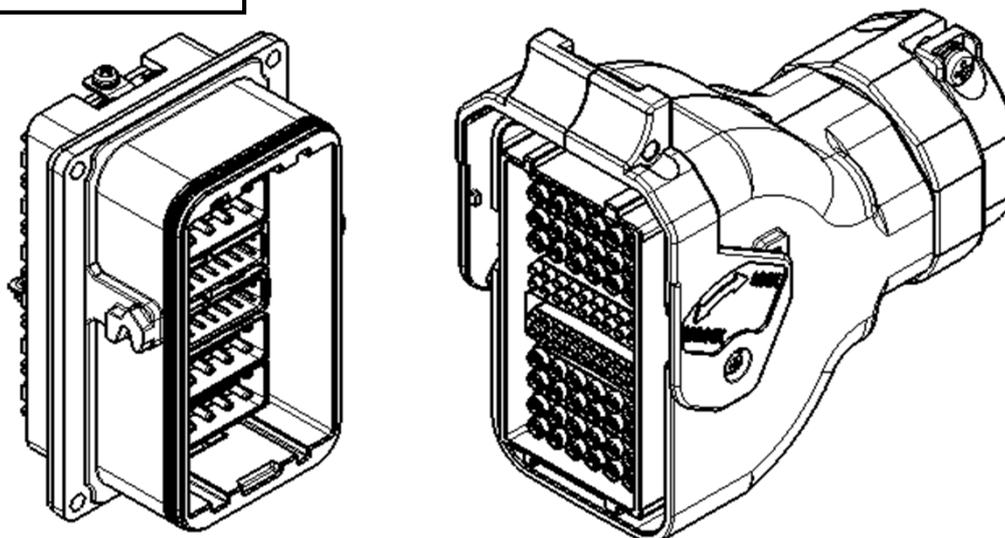
NEW


CONNECTOR

MB-0316-1

January 13, 2016

KN01 Series

RoHS Compliant

The KN01 Series is a large yet light weight and high-density waterproof rectangular connector. This connector is ideal for industrial equipment such as robotics, automated machinery and machine tools, which require to be resilient against environmental conditions. The KN01 Series can be used for a wide range of applications with an insert structure that can be customized to comply with various pin counts by combining the block style insulator. The locking lever adopts a rack and pinion system that enables mating and unmating with minimal operation.

The KN01 Series can be used as an I/O connector for a wide range of general devices over various markets that require multi-contact wiring.

Features

Rack and pinion system lever structure allows for little operating force for engagement.

The lever is stationary before mating and the dual lock structure prevents incorrect mating and operation.

Arrangement of insulator block and insertion orientation allows for various pin count and arrangements.

To allow the combined use of power and signal in a single unit an insulator with EMI noise control shielding is an option in the lineup.

Aluminum outer shell, lightweight and high-density with stamped contacts.

Achieves high cable retention force with a saddle clamp thread fastening.

Applicable Markets

Factory automation equipment, such as robotics, automation machine and other machine tools, requiring to be environmentally resilient.

Industrial and communication devices, medical equipment and general devices requiring multi-contact wiring connection.

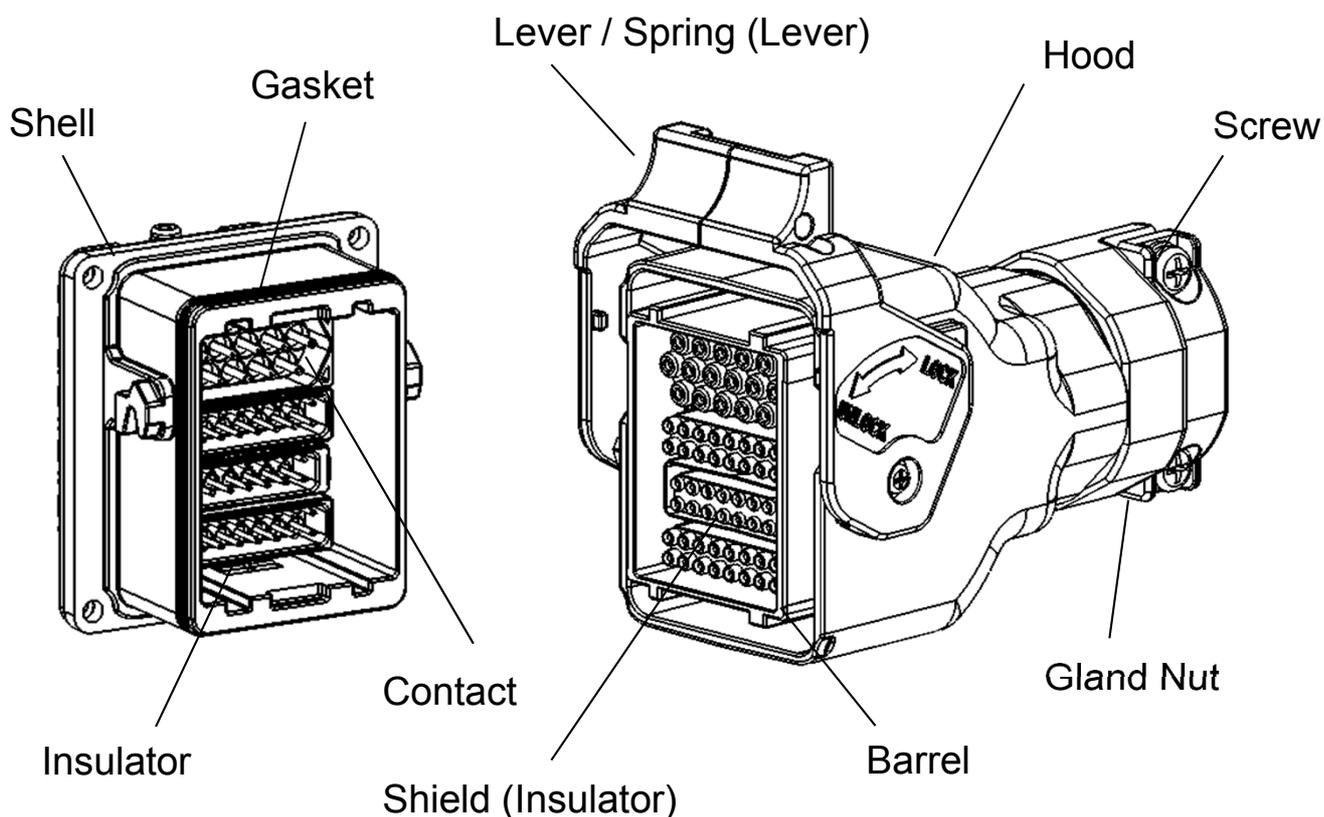
Industrial equipment, communication devices, rail car and ground-level construction that require vibration resistance and waterproofing.

General Specifications

Connector Size		M Size	L Size
		First Row: Dedicated Size Insulator Block Second to Fourth Row: Common Size Insulator Block	First to Sixth Row: Common Size Insulator Block
Insulator Block Configuration		Block A: 1 pc. & B: 3 pcs.	Block C: 6 pcs.
No. of Contacts (Maximum Number of Contacts)	Power Supply	#16×16 pos. / block A (16 pos.)	#12×12 pos. / block C (72 pos.)
	Signal	#20×16 pos. / block B (48 pos.)	#20×18 pos. / block C (108 pos.)
			#22×50 pos. / block C (300 pos.)
		[With Shield] #20×14 pos. / block B (42 pos.)	[With Shield] #20×18 pos./ block C (108 pos.)
Rated Current / Rated Voltage		#16: 16A / 250VAC #20: 3A / 24VDC	#12: 23A / 250VAC #20: 3A / 24VDC #22: 1A / 24VDC
Dielectric Withstanding Voltage	Power Supply	1500VAC for 1 minute	1500VAC for 1 minute
	Signal	500VAC for 1 minute	500VAC for 1 minute
Insulation Resistance		1000 M Ω min. (Power: 500VDC applied, Signal: 100VDC applied)	
Durability		100 times	
Cable Retention Force		300 N min.	
Operating Temperature Range		-20 Deg. C to +105 Deg. C	
Waterproof		IP67 (when connector is mated)	
Standard Certification		TÜV, cUL	

Materials and Finishes

Components	Material	Finish
Shell	Aluminum alloy	-
Barrel	Aluminum alloy	Ni plating
Hood	Aluminum alloy	-
Lever	Aluminum alloy	-
Gland Nut	Aluminum alloy	-
Insulator	Synthetic resin	-
Shield (Insulator)	Copper alloy	Ni plating
Gasket	Synthetic rubber	-
Bushing	Synthetic rubber	-
Contact	Copper alloy	Au plating over Ni
Spring (Lever)	Stainless steel	-
Screw	Stainless steel	-

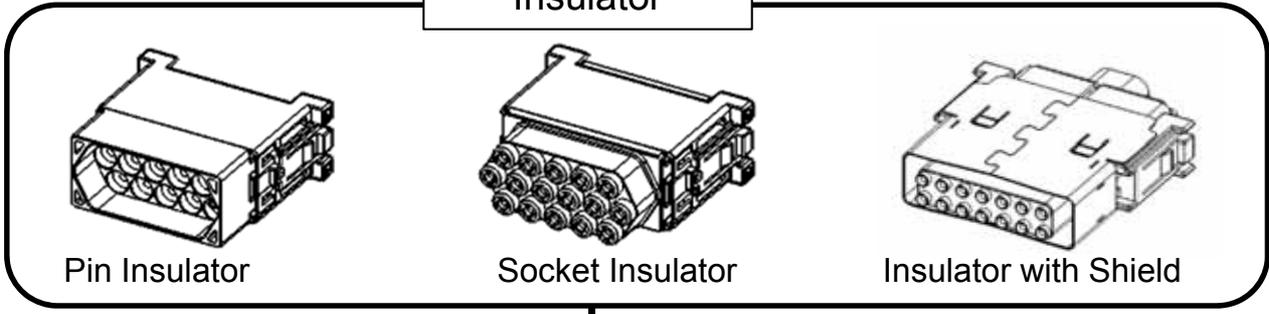


Components

Contact



Insulator

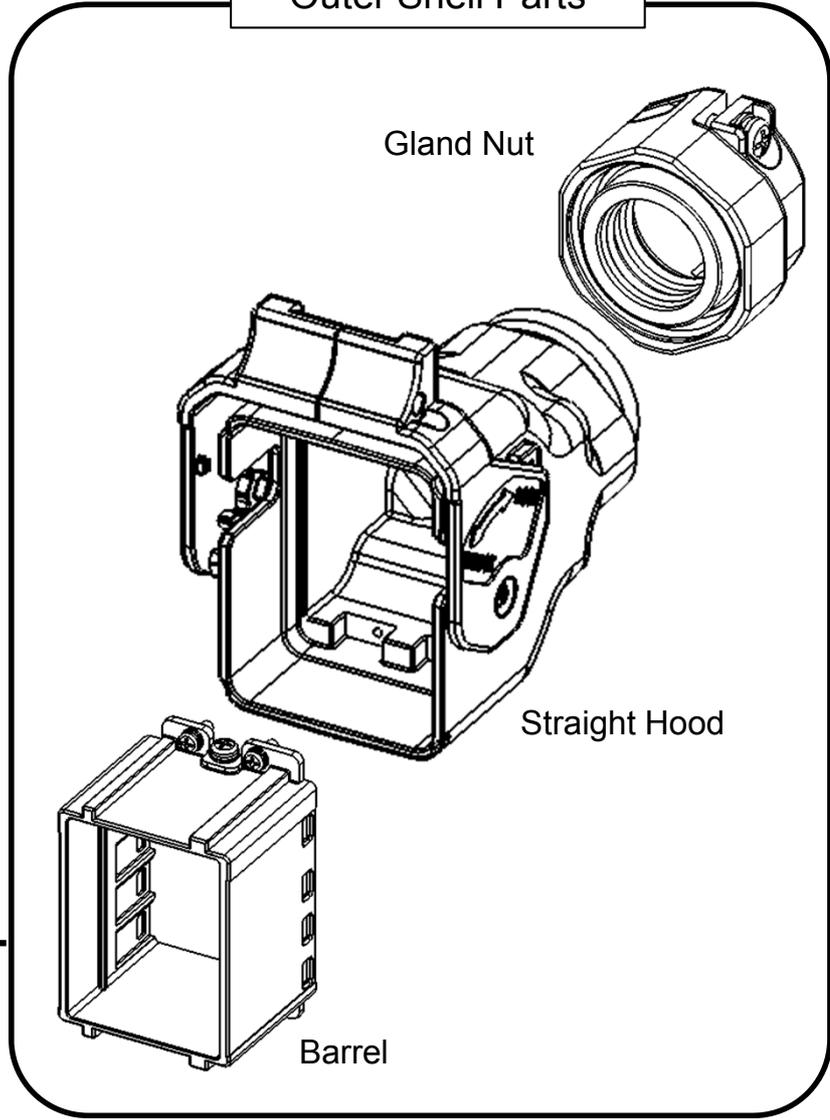
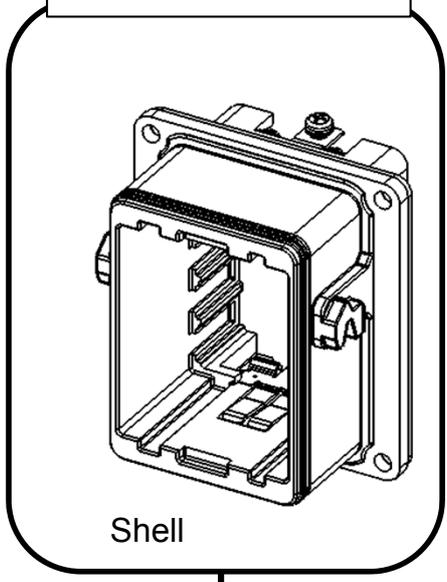


[Receptacle]

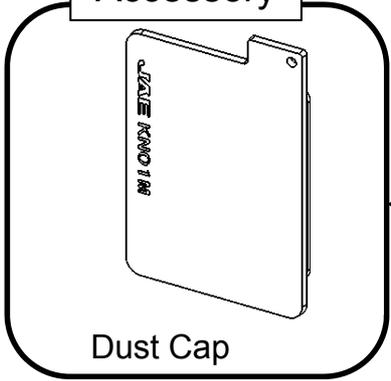
[Straight Plug]

Outer Shell Parts

Outer Shell Parts

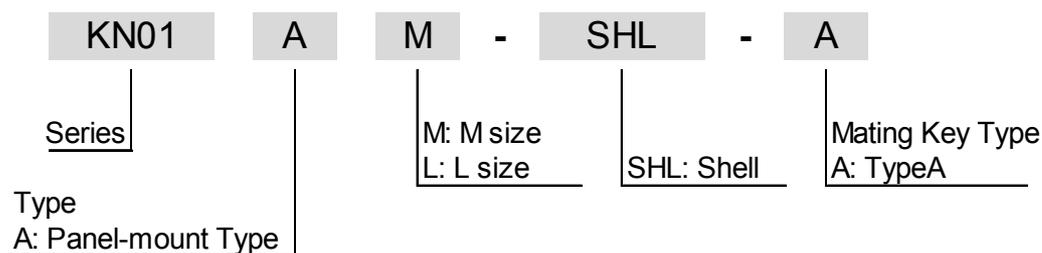


Accessory

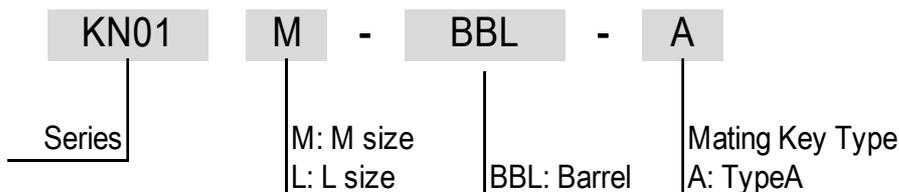


Ordering Information

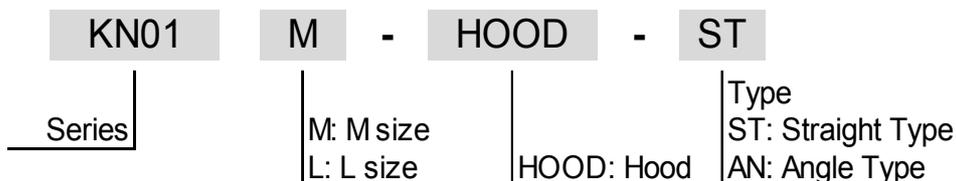
Shell



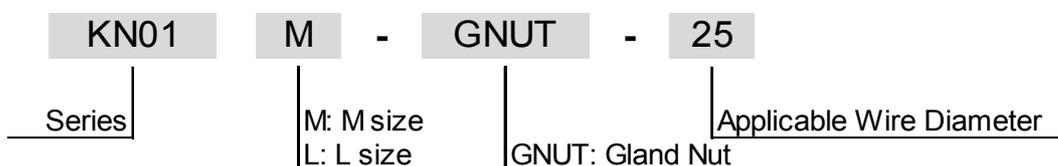
Barrel



Hood

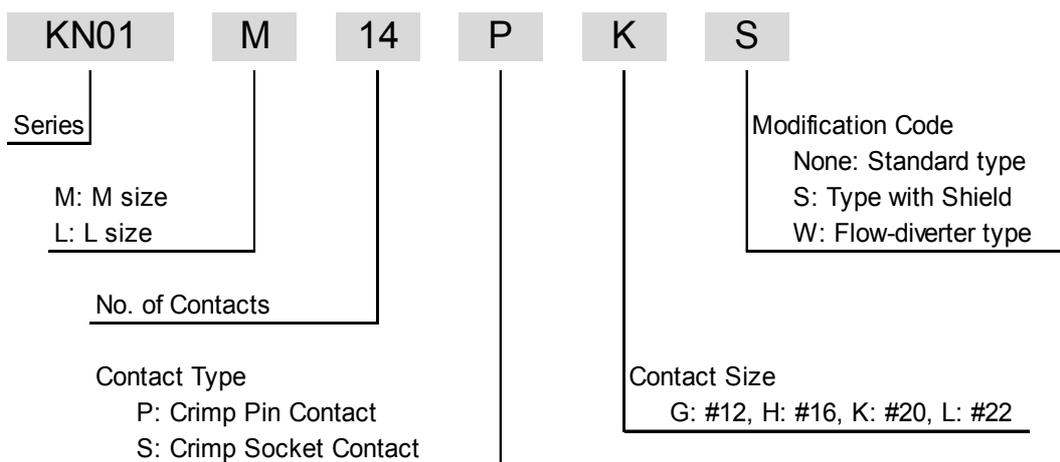


Gland Nut



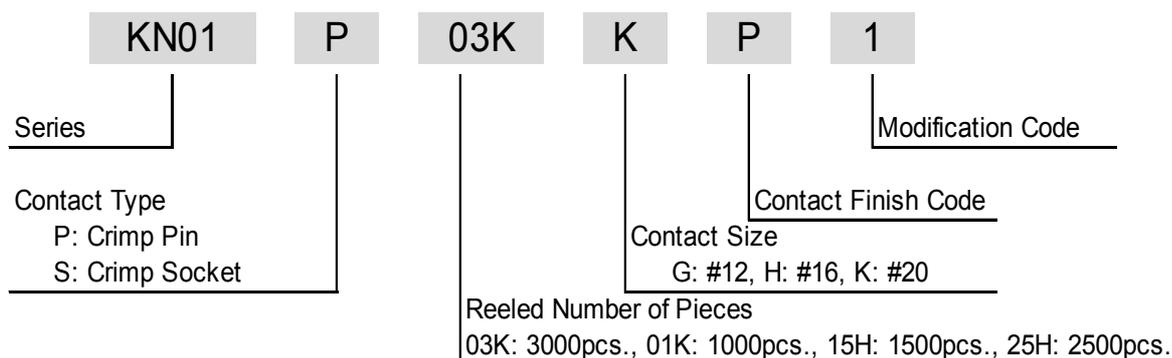
Type	Outer Shell Size	Part Number	Drawing No.	Remarks
Shell	M	KN01AM-SHL-A	SJ116541	A: Mating Key Type
	L	KN01AL-SHL-A	SJ117433	A: Mating Key Type
Barrel	M	KN01M-BBL-A	SJ116933	A: Mating Key Type
	L	KN01L-BBL-A	SJ117435	A: Mating Key Type
Hood	M	KN01M-HOOD-ST	SJ116934	
	L	KN01L-HOOD-ST	SJ117437	
		KN01L-HOOD-ST-ADP	SJ117746	with Adaptor
Gland Nut	M	KN01M-GNUT-25	SJ116935	
	L	KN01L-GNUT-36	SJ117439	

Insulator



Type	Part Number	Drawing No.	No. of Contacts	Applicable Contact Size	Applicable Outer Shell Size	Remarks
Pin	KN01M16PH	SJ116937	16 pos.	#16	M	
	KN01M16PK	SJ116939	16 pos.	#20	M	
	KN01M14PKS	SJ116941	14 pos.	#20	M	with shield
	KN01L12PG	SJ117440	12 pos.	#12	L	
	KN01L18PK	SJ117447	18 pos.	#20	L	
	KN01L18PKS	SJ117449	18 pos.	#20	L	with shield
	KN01L50PL	SJ117008	50 pos.	#22	L	
Socket	KN01M16SH	SJ116943	16 pos.	#16	M	
	KN01M16SK	SJ116945	16 pos.	#20	M	
	KN01M14SKS	SJ116947	14 pos.	#20	M	with shield
	KN01L12SG	SJ117442	12 pos.	#12	L	
	KN01L18SK	SJ117448	18 pos.	#20	L	
	KN01L18SKS	SJ117450	18 pos.	#20	L	with shield
	KN01L12SGW	SJ117451	12 pos.	#12	L	
	KN01L50SL	SJ117009	50 pos.	#22	L	

Contact



Type	Contact Size	Part Number	Drawing No.	Applicable Wire Size	Applicable Wire Dia.
Pin	#12	KN01P15HGP1	SJ116958	AWG12~AWG14	φ3.5~φ4.4
		KN01P15HGP2	SJ116956	AWG14~AWG17	φ2.8~φ3.5
	#16	KN01P25HHP1	SJ116954	AWG16~AWG20	φ1.7~φ2.4
		KN01P25HHP2	SJ116956		φ2.4~φ3.2
	#20	KN01P03KKP1	SJ116948	AWG18~AWG22	φ1.3~φ2.0
		KN01P03KKP2	SJ116950		φ2.0~φ2.8
		KN01P03KKP3	SJ116952	AWG22~AWG26	φ1.0~φ1.8
		KN01P03KKP4	SJ117065		φ1.8~φ2.8
	#22	JN1-22-20P-R-10000	SJ037431	AWG20~AWG21	φ1.5 max.
		JN1-22-22P-10000		AWG21~AWG25	φ1.5 max.
		JN1-22-26P-10000		AWG26~AWG28	φ1.1 max.
	Socket	#12	KN01S15HGP1	SJ116959	AWG12~AWG14
KN01S25HHP2			SJ116957	AWG14~AWG17	φ2.8~φ3.5
KN01S01KGPW1			SJ116960	AWG10~AWG12	φ4.0~φ4.7
#16		KN01S25HHP1	SJ116955	AWG16~AWG20	φ1.7~φ2.4
		KN01S25HHP2	SJ116957		φ2.4~φ3.2
#20		KN01S03KKP1	SJ116949	AWG18~AWG22	φ1.3~φ2.0
		KN01S03KKP2	SJ116951		φ2.0~φ2.8
		KN01S03KKP3	SJ116953	AWG22~AWG26	φ1.0~φ1.8
		KN01S03KKP4	SJ117066		φ1.8~φ2.8
#22		JN2V-22-20S-10000	SJ116974	AWG20~AWG21	φ1.5 max.
		JN2V-22-22S-10000	SJ116972	AWG21~AWG24	φ1.1~φ1.5
		JN2V-22-26S-10000	SJ116973	AWG25	φ0.8~φ1.0

Custom Tools

[Contact Crimp Tool]

Semi-automatic Crimp Applicator

Contact Size	Contact	Applicable Tool	Applicable Wire Size	Applicable Wire Dia.	Handling Instructions
#12	KN01*15HGP1	350-KN01-10	AWG12~AWG17	φ3.5~φ4.4	T703551
	KN01*15HGP2			φ2.8~φ3.5	
	KN01S01KGPW1	350-KN01W-10	AWG10~AWG12	φ4.0~φ4.7	T703553
#16	KN01*25HHP1	3502-KN01-2B	AWG16~AWG20	φ1.7~φ2.4	T703537
	KN01*25HHP2			φ2.4~φ3.2	
#20	KN01*03KKP1	3502-KN01-2	AWG18~AWG22	φ1.3~φ2.0	T703536
	KN01*03KKP2			φ2.0~φ2.8	
	KN01*03KKP3		AWG22~AWG26	φ1.0~φ1.8	
	KN01*03KKP4			φ1.8~φ2.8	
#22	JN2V-22-20S-10000	350-JN1-2C 3502-JN1-2C	AWG20~AWG28	φ0.8~φ1.5	T703294 T703413
	JN2V-22-22S-10000				
	JN2V-22-26S-10000				
	JN1-22-20P-R-10000				
	JN1-22-22P-10000				
JN1-22-26P-10000					

Manual Crimp Tool

<Separate Type>

Contact Size	Contact	Applicable Tool	Applicable Wire Size	Applicable Wire Dia.	Handling Instructions
#12	KN01*15HGP1	CT170-21I-KN01	AWG12~AWG17	φ3.5~φ4.4	T700400
	KN01*15HGP2	CT170-21J-KN01		φ2.8~φ3.5	T700416
#16	KN01*25HHP1	CT170-20E-KN01	AWG16~AWG20	φ1.7~φ2.4	T700387
	KN01*25HHP2			φ2.4~φ3.2	
#20	KN01*03KKP2	CT170-14B-KN01	AWG18~AWG22	φ2.0~φ2.8	T700376
	KN01*03KKP3	CT170-14C-KN01	AWG22~AWG26	φ1.0~φ1.8	T700414
	KN01*03KKP4	CT170-14D-KN01		φ1.8~φ2.8	
#22	JN2V-22-20S-10000	CT150-2C-JN2V	AWG20,21	φ1.5 以下	T700406
	JN2V-22-22S-10000	CT150-2C-JN2V	AWG20,21	φ0.8~φ1.5	
	JN2V-22-26S-10000	CT150-2-JN2V	AWG26,28	φ1.1 max.	
	JN1-22-20P-R-10000	CT150-2C-JN2V	AWG20,21	φ1.5 max.	T700406
		CT150-4-JN1-E	AWG21,23,25		T700248
	JN1-22-22P-10000	CT150-2C-JN2V	AWG20,21	φ1.5 max.	T700406
		CT150-4-JN1-D	AWG20,21,26,28		T700248
	JN1-22-26P-10000	CT150-2-JN2V	AWG26,28	φ1.1 max.	T700406
CT150-4-JN1-B-1		AWG22,24,26,28	T700248		

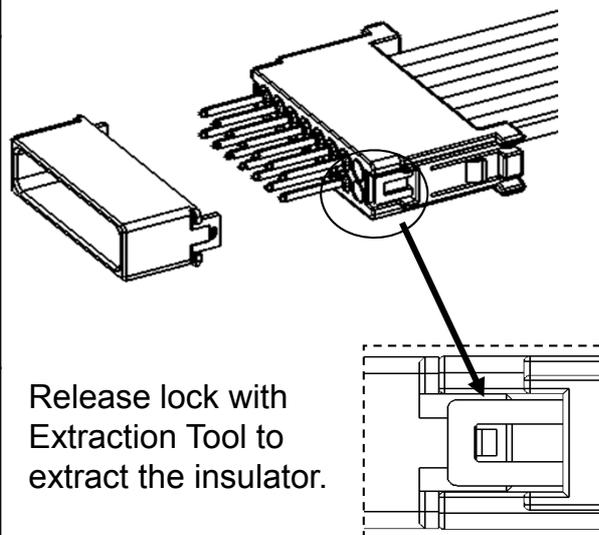
<Common Tools>

Contact Size	Contact	Applicable Tool	Applicable Wire Size	Applicable Wire Dia.	Handling Instructions
#20	KN01*03KKP1	CT170-14F-KN01 CT170-20F-KN01	AWG18~AWG22	φ1.3~φ2.0	T700375 T700399
	KN01*03KKP3	* Note1	AWG22~AWG26	φ1.0~φ1.8	

Note1) Both contact and wires size from AWG 18 to 26 can be crimped by both tools.

Insulator Extraction Tools

Insulator	Extraction Tool Part Number	Handling Instructions
KN01M16PH KN01M16SH	WT-KN01-16	T714371
KN01M16PK KN01M16SK	WT-KN01-20	
KN01M14PKS KN01M14SKS		
KN01L12PG KN01L12SG KN01L12SGW KN01L18PK KN01L18SK KN01L18PKS KN01L18SKS	WT-KN01-12	T714383



Release lock with Extraction Tool to extract the insulator.

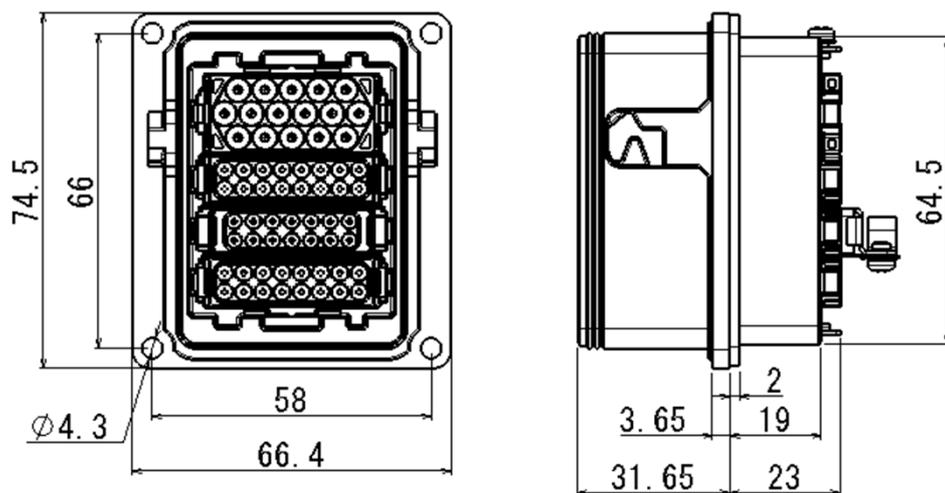
Contact Extraction Tool

Contact Size	Extraction Tool Part Number	Handling Instructions
#12	ET-KN01-12	T711209
	ET-KN01W-12	T711210
#16	ET-KN01-16	T711204
#20	ET-KN01-20	
#22	ET-JN1	T711133

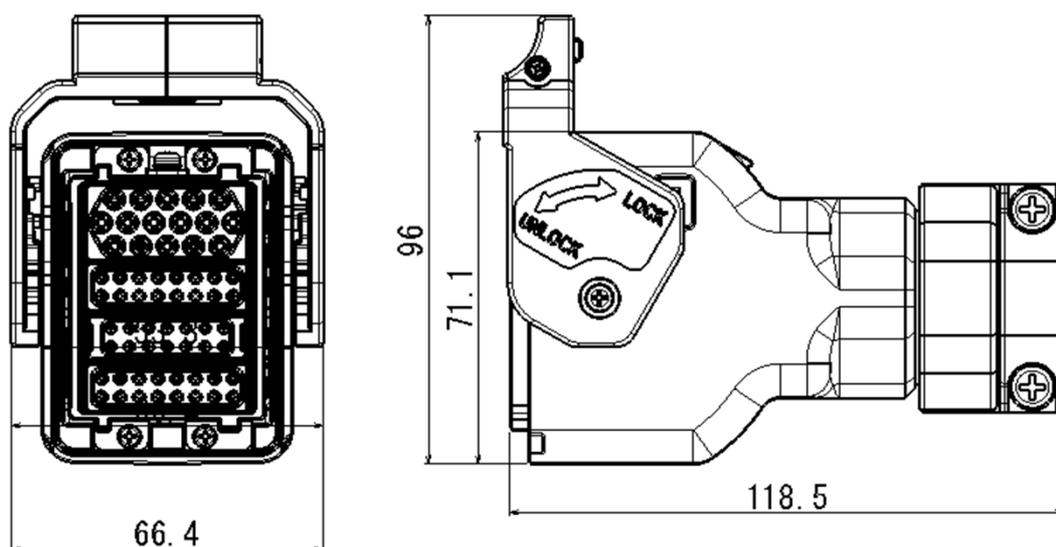
Note) When extracting a miss-wired contact, first unlock and extract insulator from connector with Insulator Extraction Tool before using the Contact Extraction Tool.

Product Drawings

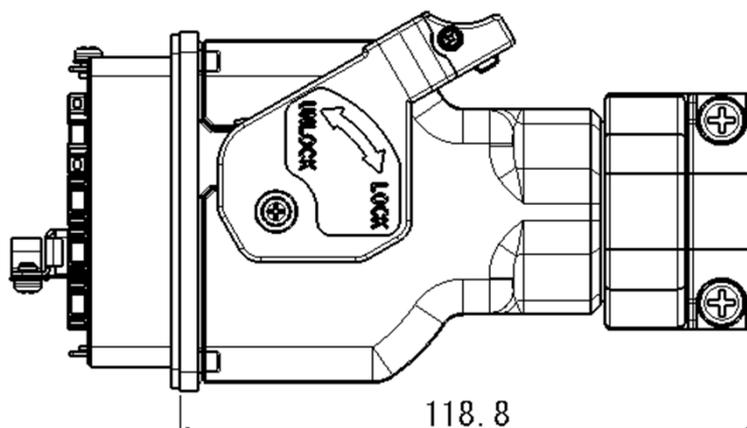
Receptacle (KN01 / M size)



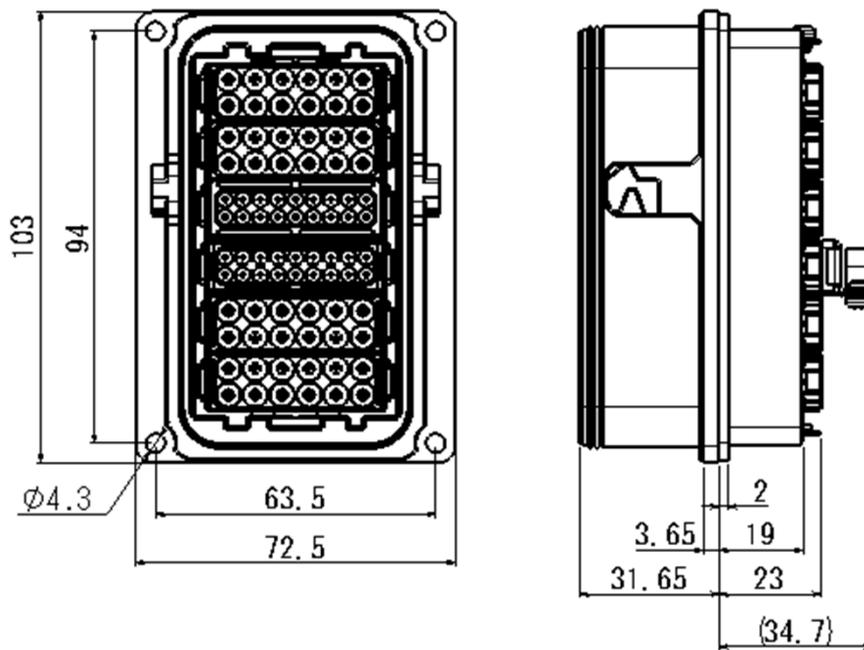
Plug (KN01 / M size)



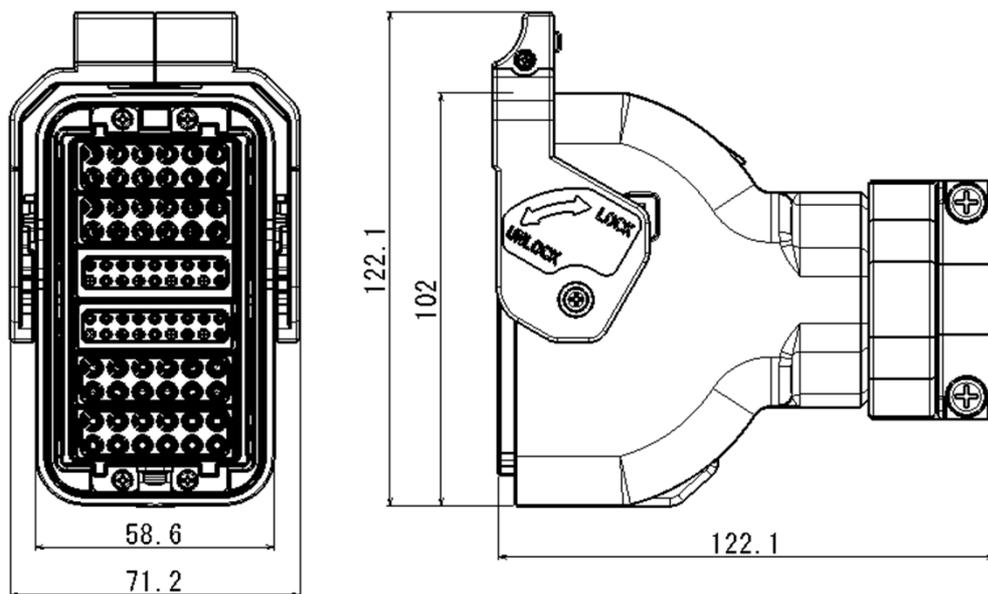
Dimensions when mated (KN01 / M size)



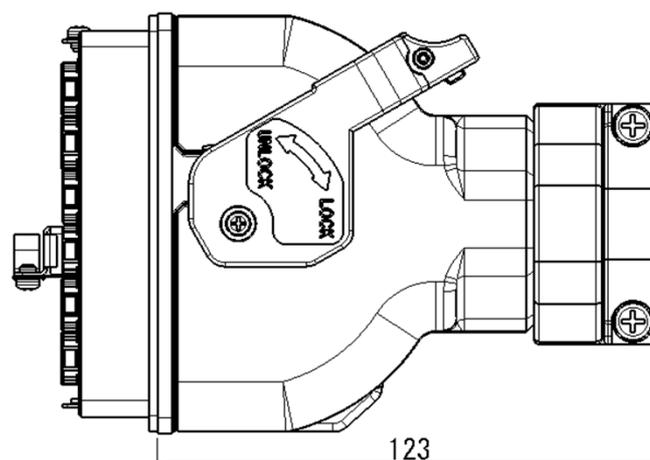
Receptacle (KN01 / L size)



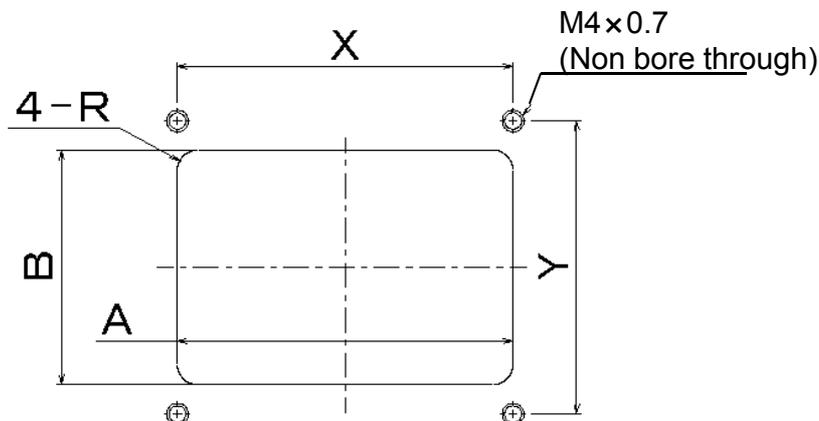
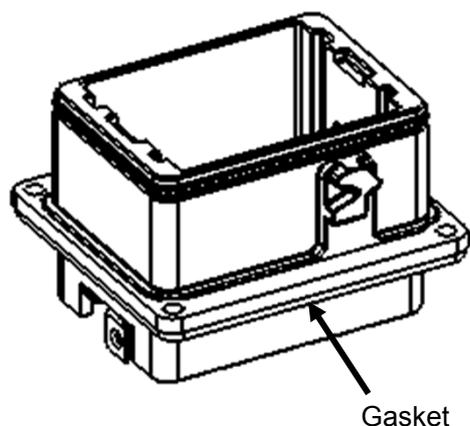
Plug (KN01 / L size)



Dimensions when mated (KN01 / L size)



Receptacle Fixture Dimensions



Outer Shell Size	Dimensions for Panel Fixture					Applicable Screw (for reference)
	A	B	R	X	Y	
M	66 [+0.5/0]	46.4 [+0.5/0]	R4 [± 0.3]	66 [± 0.13]	58 [± 0.13]	M4 x 0.7
L	96 [+0.5/0]	53.4 [+0.5/0]	R4 [± 0.3]	94 [± 0.13]	63.5 [± 0.13]	M4 x 0.7

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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