

High-density, Waterproof Rectangular Connector KN01 Series

CONNECTOR

MB-0316-2

Jan.2022

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 configuring the different insulator blocks.

The rack and pinion system locking lever enables mating and unmating with minimum effort. The KN01 Series can be used as an I/O connector for a wide range of general devices over various markets requiring 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 incomplete mating and incorrect operation.
- Multiple configuration of insulator blocks and insertion orientation allows for various pin counts and cabling arrangements.
- An optional insulator block with EMI noise control shielding allows the combination of power and signal in a single unit.
- Aluminum outer shell provides the connector to be lightweight and allows high-density cabling.
- Superior cable retention through a thread-fastening saddle clamp.

Applicable Markets

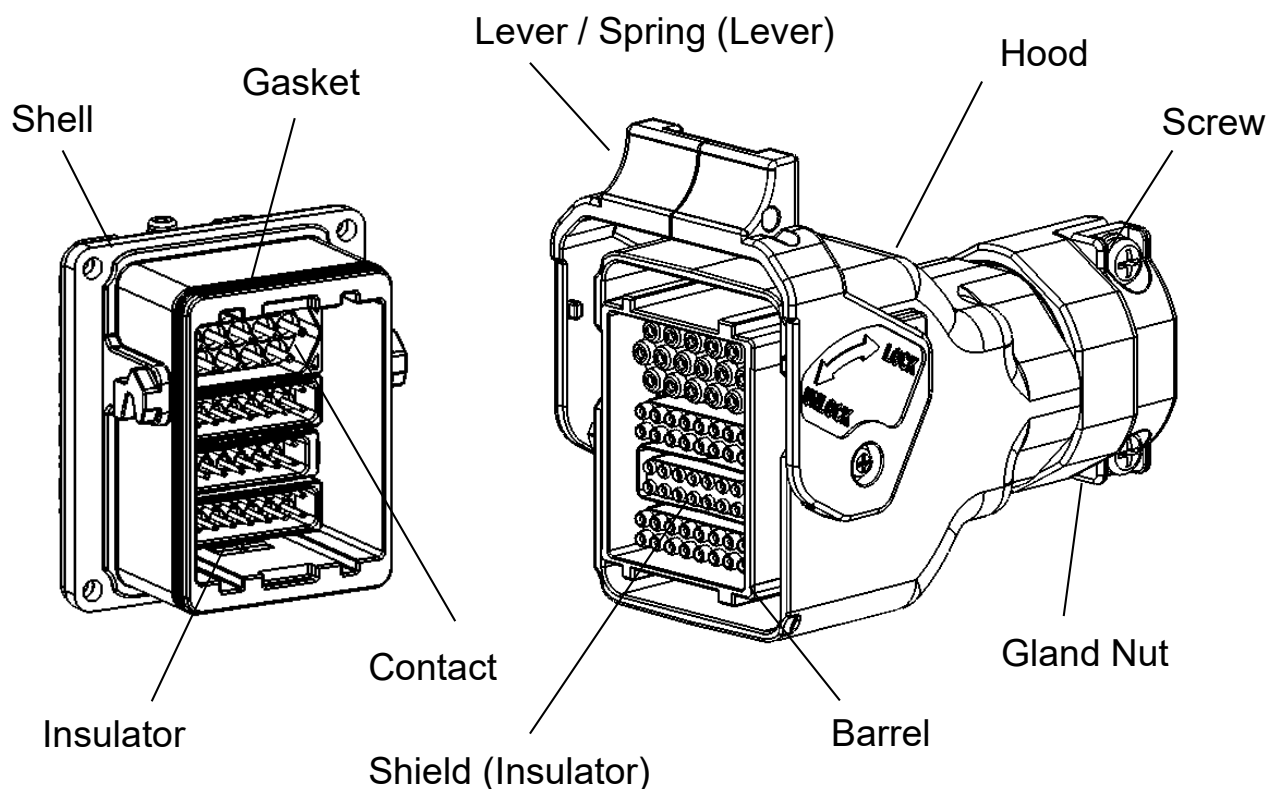
- Factory automation equipment, such as robotics, automation machine and other machine tools, requiring to be environmentally resilient.
- Industrial and communication devices, medical equipment and general devices requiring multi-contact wiring connection.
- Industrial equipment, communication devices, rail car and ground-level construction that require vibration resistance and waterproofing.

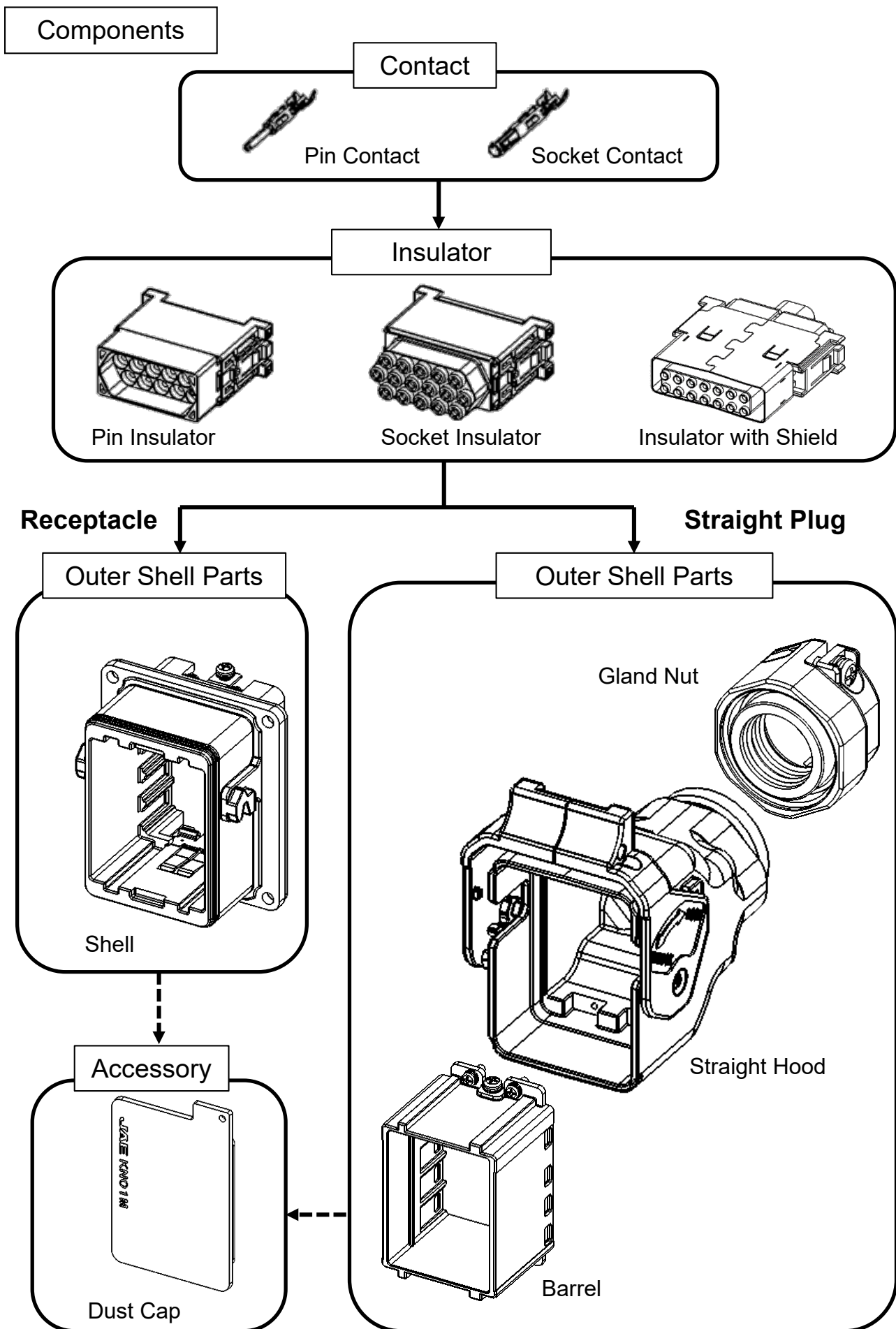
General Specifications

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 ×2./ block B (28 pos.)	[With Shield] #20×18 pos ×4./ block C (72 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 cycles	
Cable Retention Force		300 N min.	
Operating Temperature Range		-20 Deg. C to +105 Deg. C	
Waterproof		IP67 (in mated condition)	
Standard Certification		TÜV, cUL	

Materials and Finishes

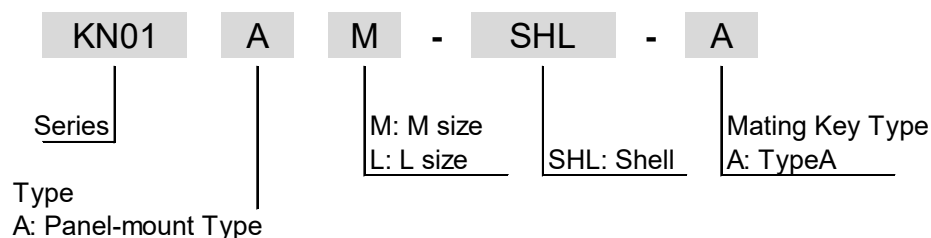
Components	Material	Finish
Shell	Aluminum alloy	—
Barrel	Aluminum alloy	Ni plating
Hood	Aluminum alloy	—
Lever	Aluminum alloy	—
Gland Nut	Aluminum alloy	—
Insulator	Synthetic resin	—
Shield (Insulator)	Copper alloy	Ni plating
Gasket	Synthetic rubber	—
Bushing	Synthetic rubber	—
Contact	Copper alloy	Au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



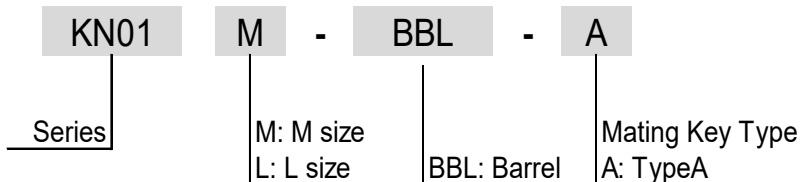


Ordering Information

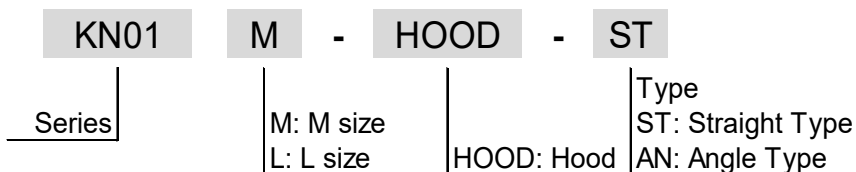
Shell



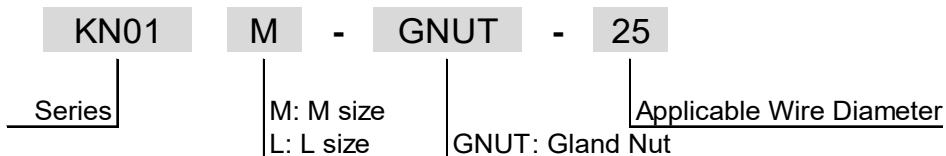
Barrel



Hood



Gland Nut



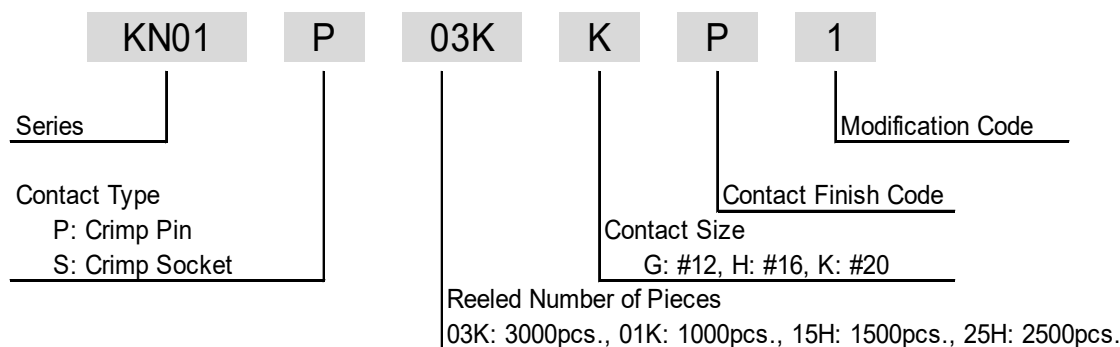
Type	Outer Shell Size	Part Number	Drawing No.	Remarks
Shell	M	KN01AM-SHL-A	SJ116541	A: Mating Key Type
	L	KN01AL-SHL-A	SJ117433	A: Mating Key Type
Barrel	M	KN01M-BBL-A	SJ116933	A: Mating Key Type
	L	KN01L-BBL-A	SJ117435	A: Mating Key Type
Hood	M	KN01M-HOOD-ST	SJ116934	
	L	KN01L-HOOD-ST	SJ117437	
		KN01L-HOOD-ST-ADP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

Insulator

KN01	M	14	P	K	S
Series	No. of Contacts		Modification Code		
M: M size L: L size			None: Standard type S: Type with Shield W: Flow-diverter type		
Contact Type			Contact Size		
P: Crimp Pin Contact S: Crimp Socket Contact			G: #12, H: #16, K: #20, L: #22		

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

Note: Please check the tool manuals for applicable wire and cable diameter details.

Custom Tools

Contact Crimp Tools

Manual Crimp Tool

Contact Size	Contact Type	Contact	Applicable Tool	Applicable Wire Size	Applicable Wire Dia.	Tool manual
#12	Pin	KN01P15HGP1	CT170-21J-KN01	AWG14~AWG12	φ3.5~φ4.4	T700416
		KN01P15HGP2		AWG17~AWG12	φ2.8~φ3.5	
	Socket	KN01S15HGP1		AWG14~AWG12	φ3.5~φ4.4	
		KN01S15HGP2		AWG17~AWG14	φ2.8~φ3.5	
#16	Pin	KN01P25HHP1	CT150-19-KN01-16	AWG19,AWG16	φ1.7~φ2.4	T700411
		KN01P25HHP2		AWG19,AWG16	φ2.4~φ3.2	
	Socket	KN01S25HHP1		AWG19,AWG16	φ1.7~φ2.4	
		KN01S25HHP2		AWG19,AWG16	φ2.4~φ3.2	
#20	Pin	KN01P03KKP1	CT150-19-KN01-20	AWG22~AWG19	φ1.3~φ2.0	T700409
		KN01P03KKP2	CT150-19B-KN01-20	AWG19	φ2.0~φ2.8	T700410
		KN01P03KKP3		AWG25,23,22	φ1.0~φ1.8	
	Socket	KN01S03KKP1	CT150-19-KN01-20	AWG22~AWG19	φ1.3~φ2.0	T700409
		KN01S03KKP2	CT150-19B-KN01-20	AWG19	φ2.0~φ2.8	T700410
		KN01S03KKP3		AWG25,23,22	φ1.0~φ1.8	
#22	Pin	JN1-22-20P-R-PKG100	CT150-2-JN1-D	AWG20, 21	φ1,3~1.5	T700253
		JN1-22-22P-PKG100		AWG25	φ0.8~1.0	
		JN1-22-22P-PKG100	CT150-2-JN1-E	AWG21, 23	φ1.0~1.5	
		JN1-22-22P-PKG100	CT150-2-JN1-B	AWG22, 24	φ1.0~1.3	
		JN1-22-26P-PKG100		AWG26, 28	φ0.8~1.0	
		JN1-22-20P-R-10000	CT150-4-JN1-D	AWG20, 21	φ1.3~1.5	T700248
		JN1-22-22P-10000		AWG26, 28	φ0.8~1.0	
		JN1-22-22P-10000	CT150-4-JN1-E	AWG21, 23	φ1.0~1.5	
	JN1-22-22P-10000	CT150-4-JN1-B-1	AWG25	φ0.8~1.0		
	JN1-22-22P-10000		AWG22, 24	φ1.0~1.3		
	JN1-22-26P-10000	CT150-4-JN1-B-1	AWG26, 28	φ0.8~1.0		
	JN2V-22-20S-10000		CT150-4-JN1-D	AWG20, 21	φ1.3~1.5	T700248
	JN2V-22-22S-10000	AWG26, 28		φ0.8~1.0		
	JN2V-22-22S-10000	CT150-4-JN1-E	AWG21, 23	φ1.0~1.5		
JN2V-22-22S-10000	CT150-4-JN1-B-1	AWG25	φ0.8~1.0			
JN2V-22-22S-10000		AWG22, 24	φ1.0~1.3			
JN2V-22-26S-PKG100	CT150-4-JN1-B-1	AWG26, 28	φ0.8~1.0			
JN2V-22-26S-PKG100		CT150-2-JN2V	AWG26, 28	φ0.8~1.0		
JN2V-22-22S-PKG100	CT150-2B-JN2V	AWG22, 24	φ0.8~1.3	T700406		
JN2V-22-20S-PKG100	CT150-2C-JN2V	AWG20, 21	φ1.5以下			

Note: Please check the tool manuals for applicable wire and cable diameter details.

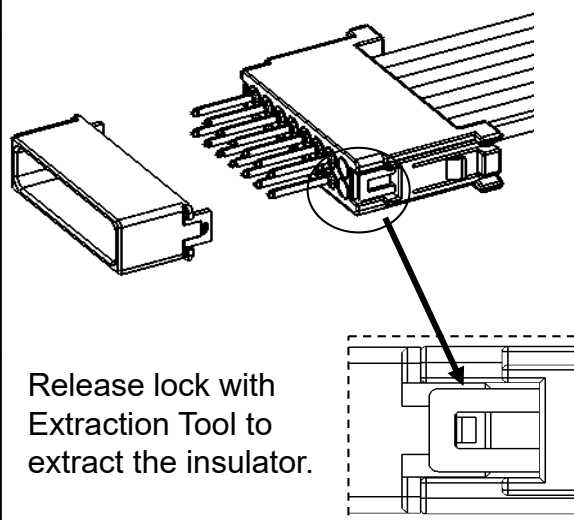
Semi-automatic Crimp Applicator

Contact Size	Contact	Applicable Tool	Applicable Wire Size	Applicable Wire Dia.	Tool manual
#12	KN01*15HGP1	350-KN01-10	AWG12~AWG17	$\phi 3.5 \sim \phi 4.4$	T703551
	KN01*15HGP2			$\phi 2.8 \sim \phi 3.5$	
	KN01S01KGPW1	350-KN01W-10	AWG10~AWG12	$\phi 4.0 \sim \phi 4.7$	T703553
#16	KN01*25HHP1	3502-KN01-2B	AWG16~AWG20	$\phi 1.7 \sim \phi 2.4$	T703537
	KN01*25HHP2			$\phi 2.4 \sim \phi 3.2$	
#20	KN01*03KKP1	3502-KN01-2	AWG18~AWG22	$\phi 1.3 \sim \phi 2.0$	T703536
	KN01*03KKP2			$\phi 2.0 \sim \phi 2.8$	
	KN01*03KKP3		AWG22~AWG26	$\phi 1.0 \sim \phi 1.8$	
	KN01*03KKP4			$\phi 1.8 \sim \phi 2.8$	
#22	JN2V-22-20S-10000 JN2V-22-22S-10000 JN2V-22-26S-10000 JN1-22-20P-R-10000 JN1-22-22P-10000 JN1-22-26P-10000	350-JN1-2C 3502-JN1-2C	AWG20~AWG28	$\phi 0.8 \sim \phi 1.5$	T703294 T703413

Note: Please check the tool manuals for applicable wire and cable diameter details.

Insulator Extraction Tools

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



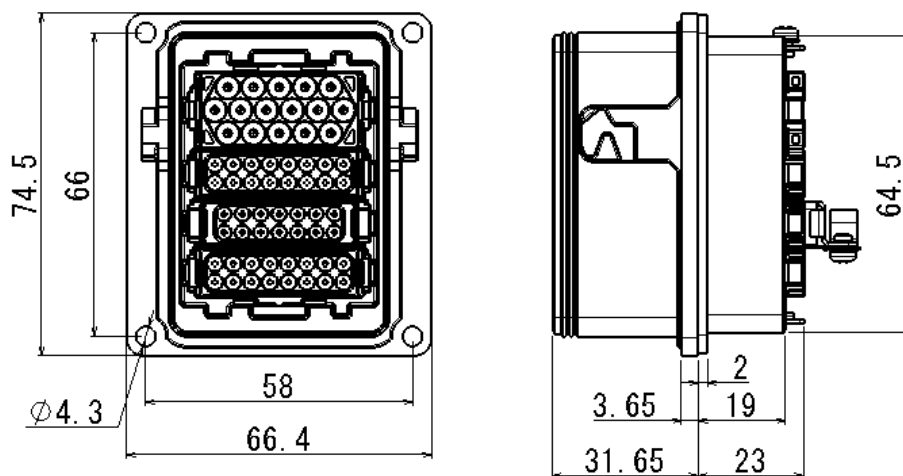
Contact Extraction Tool

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

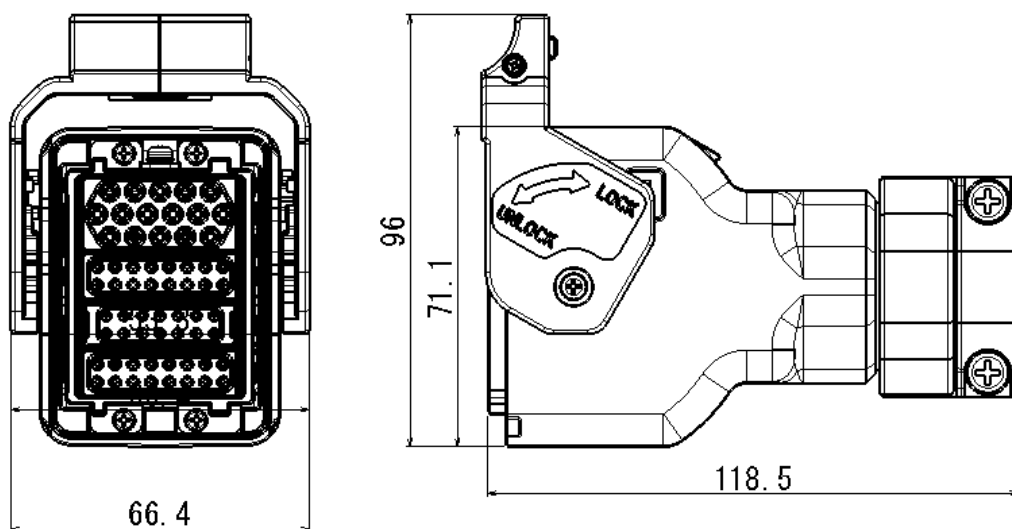
Note) When extracting a miss-wired contact, first unlock and extract insulator from connector with Insulator Extraction Tool before using the Contact Extraction Tool.

Product Drawings

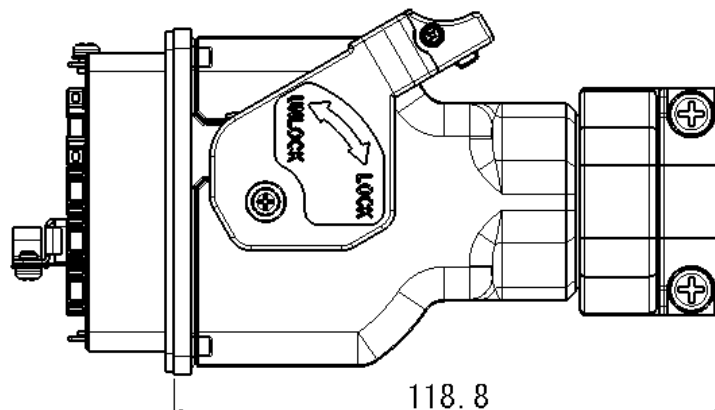
Receptacle (KN01 / M size)



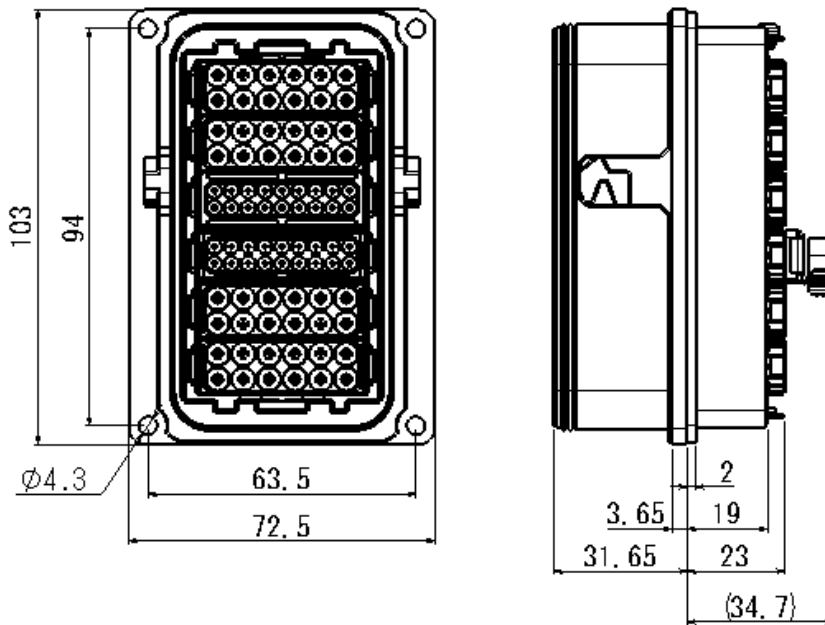
Plug (KN01 / M size)



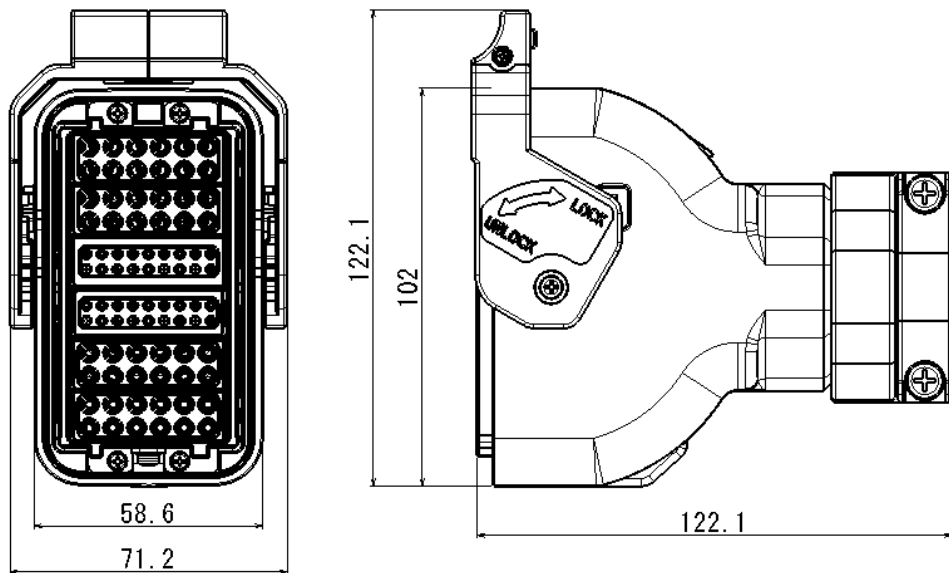
Dimensions when mated (KN01 / M size)



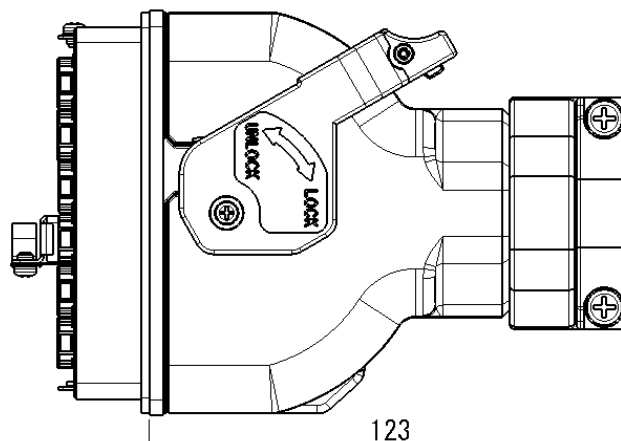
Receptacle (KN01 / L size)



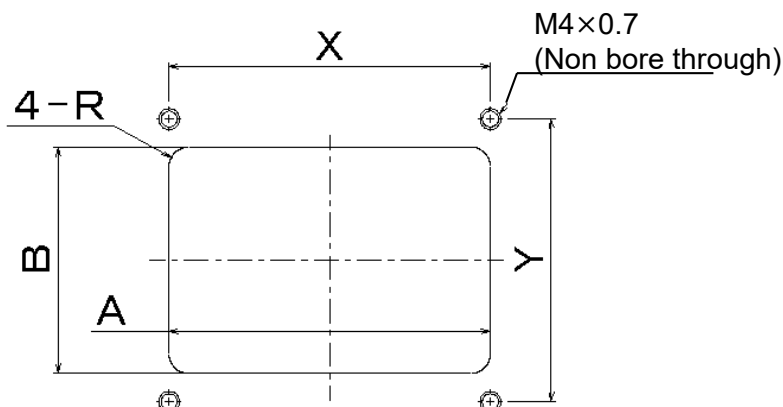
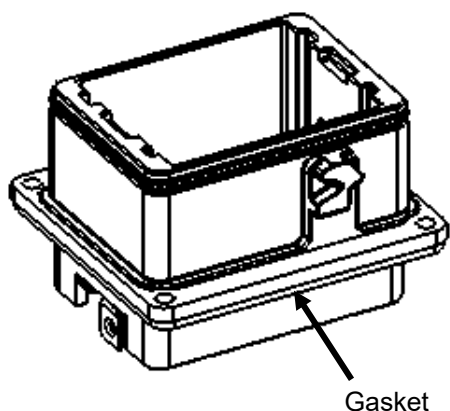
Plug (KN01 / L size)



Dimensions when mated (KN01 / L size)



Receptacle Panel Mount 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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