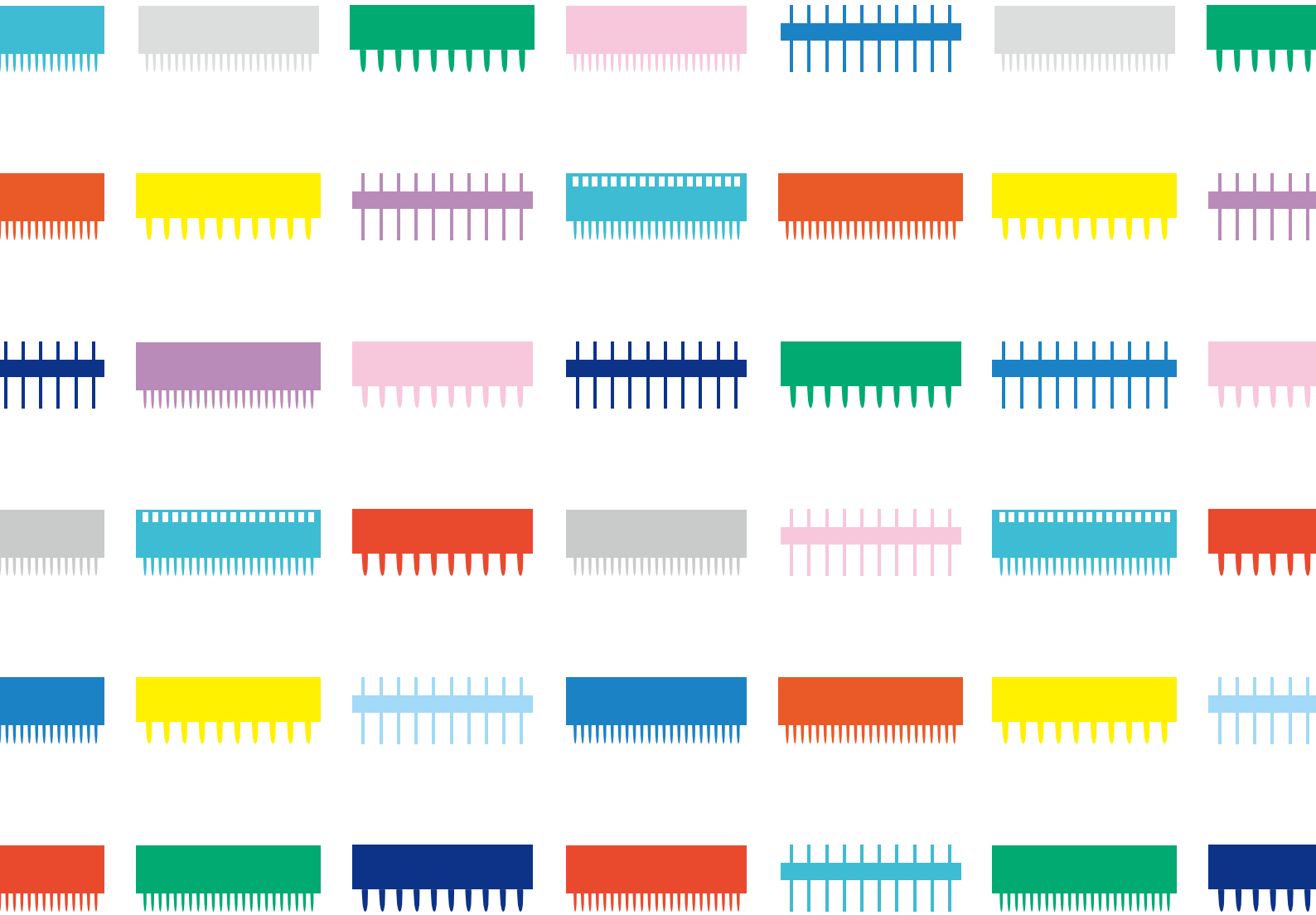
KEL Product Handbook

KEL
www.kel.jp

Connection technology of KEL
well leads the advanced technology



Connecting customers with trust.

KEL places the utmost importance on the communication with customers.

KEL contributes to solving customer's tasks with substantial communication and abundant connection technology cultivated over many years. Established in 1962, KEL has been a professional manufacturer of industrial connectors business. It is also the history that KEL continued pursuing excellent connection reliability and high functionality while electronics equipment became miniaturized and advanced functions. Through substantial communication, KEL has clarified the issues that customers must solve and demands that will lead to the next generation. KEL has continued to offer new products that always go one step ahead by continuing its own research and development. KEL intends to offer cutting-edge technical proposals and high-function products in the area of connection technology for the brilliant future developed by electronics. KEL will responds to intense progress technology and market environment with creativity. Please keep expecting KEL's advanced technology and product development in the future.

Yamanashi factory

KEL Corporate Profile

Trade Name	: KEL CORPORATION
Established	: July 23, 1962
Total Capital	: 1,617 Million Yen
President	: Akira Kasuga
Head Office Address	: 6-17-7 Nagayama, Tama-shi, Tokyo 206-0025, Japan
URL	: www.kel.jp

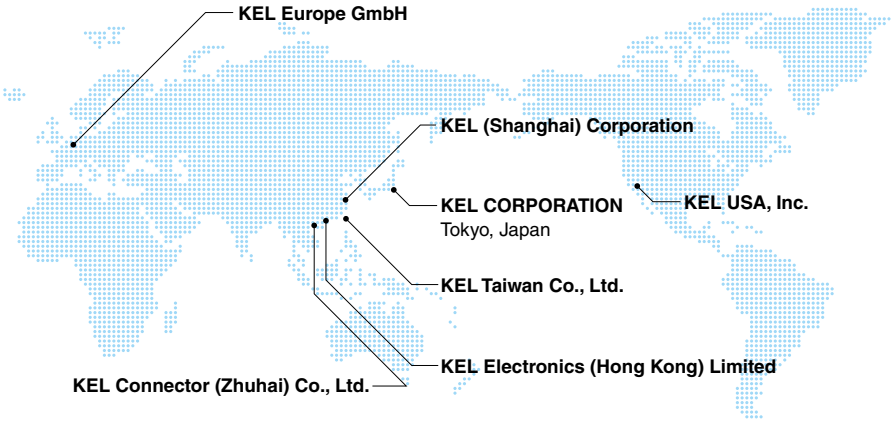
Head Office

Manufacturing Locations

Yamanashi Factory / Nishi-Yatsushiro-gun, Yamanashi, Japan
Nagano Factory / Kita-Azumi-gun, Nagano, Japan
Minami-Alps Factory / Minami-Alps-shi, Yamanashi, Japan

Overseas Locations

KEL (Shanghai) Corporation
KEL Electronics (Hong Kong) Limited
KEL Connector (Zhuhai) Co., Ltd.
KEL Taiwan Co., Ltd.
KEL Europe GmbH
KEL USA, Inc.



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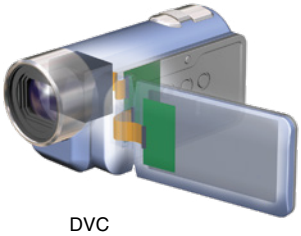
Application

Image Equipment

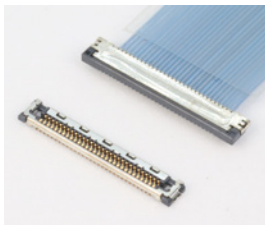
KEL micro coaxial cable connector realizes the ultra miniaturization and high-speed transmission characteristics for the latest connection technology of imaging equipment.

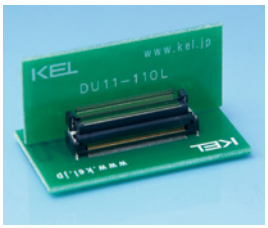


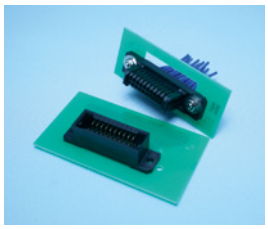
DVC

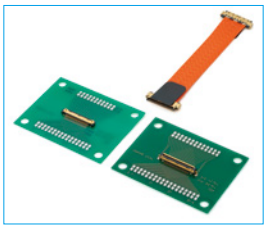
Digital camera

Security camera









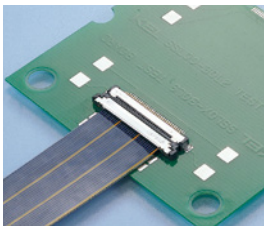
Automotive Equipment

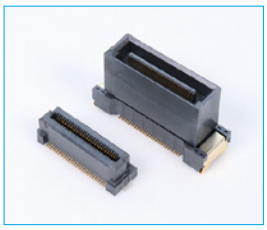
KEL floating connector and micro coax cable connector support the latest infotainment of in-vehicle equipment.

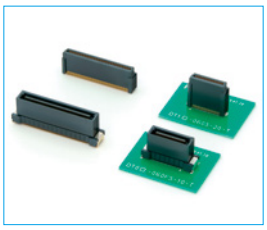
ETC

EV

Car infotainment



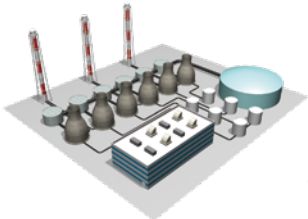




Infrastructure Equipment

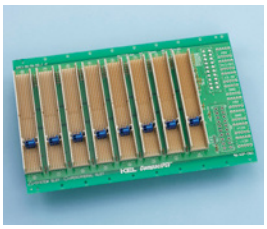
KEL industrial connectors and racks comply with high quality standards of infrastructure equipment that requires high reliability and environmental durability.

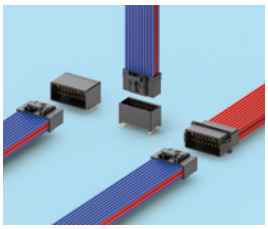
Smart meter

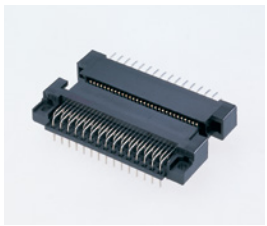


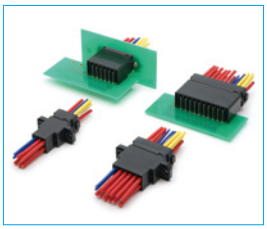
Power generating equipment

Raillways





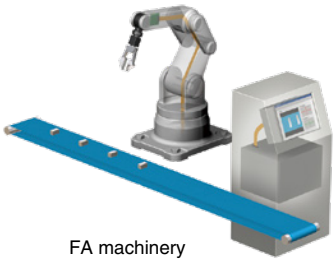




Production Equipment

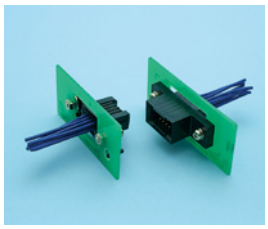
KEL Industrial Connector has proven experience since its establishment in production equipment requiring high reliability.

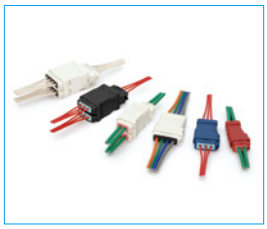
ATM



FA machinery

Semiconductor manufacturing device

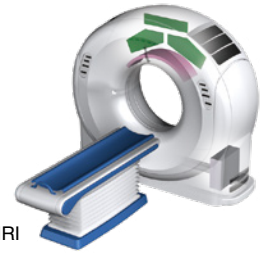




Medical device

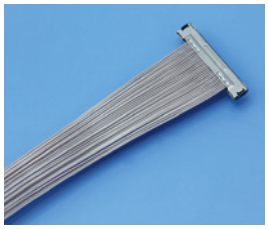
KEL connector and rack support the latest technology of medical devices with high reliability and excellent transmission characteristics.

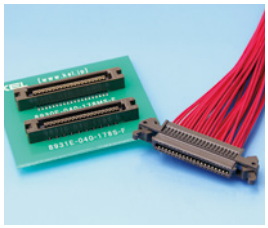
Ultrasound machine

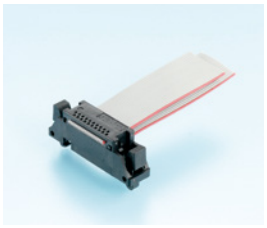


MRI

Endoscope





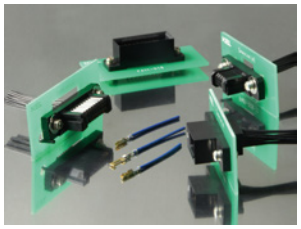


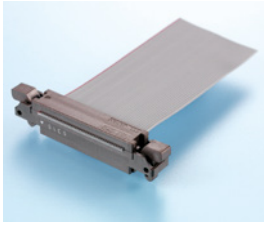
Amusement machine

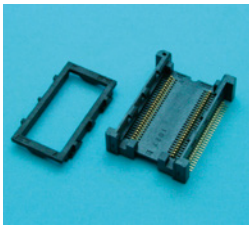
KEL IC sockets, Board to Board & Wire to Board connector series are widely designed for Amusement machines.

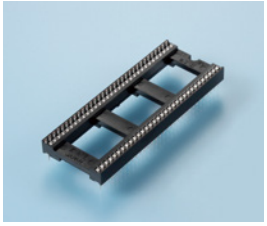
Slot machine

Gaming equipment

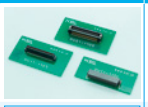
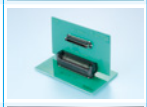
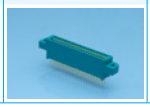








Product list

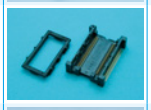
Category	Series		Pitch (mm)	Contact		Mounting type	Connection type				Harness type			Other specifications				Page No.
				Number of contacts	Available options		Stacking(mm)	Horizontal	Vertical	Harness	Harness processing	AWG number	Cable type	Features / Standards	Lock mechanism	Packaging	Current rating	
Board to board connectors	DU		0.4	80–200	5	SMT	5, 7	-	✓	-	-	-	-	Floating	-	Reel	0.4A *2	11
	DUS		0.4	40–200	8	SMT	3	-	-	-	-	-	-	Floating High heat resistance 125˚C	-	Reel	0.4A *2	11
	DT		0.5	30–240	9	SMT	8–20	✓	✓	-	-	-	-	Floating	-	Reel Tray	0.4A *2	10
	DT-FS		0.5	30–140	7	SMT	18-30	-	✓	-	-	-	-	Floating	-	Reel	0.5A *2	10
	DT-E		0.5	30-140	7	SMT	8-20	-	-	-	-	-	-	Floating with power terminal	-	Reel	0.4A (Power contact 6A) *2	9
	DT-E-FS		0.5	30-140	7	SMT	18-30	-	-	-	-	-	-	Floating with power terminal	-	Reel	0.4A (Power contact 6A) *2	9
	DT-S		0.5	30, 40, 100	3	SMT	10	-	✓	-	-	-	-	Floating with shell	-	Reel	0.4A *2	10
	DT12/13		0.5	60	1	SMT	18	-	-	-	-	-	-	Floating High heat resistance 125˚C	-	Reel	0.4A *3	10
	DY		0.5	30–140	8	SMT	5–14	-	✓	-	-	-	-	Floating	-	Reel Tray	0.4A (L Type: 0.3A) *2	11
	DY03/04		0.5	50-140	6	SMT	5	-	-	-	-	-	-	Floating High heat resistance 105˚C	-	Reel	0.4A *2	11
	8600 *1		0.635	40–200	9	SMT	8–16 (With lock)	✓	✓	✓	IDC	AWG#30	Flat	-	Eject lock	Tray (Pipe)	0.5A	18
	87		1	30–120	5	SMT	5	✓	✓	-	-	-	-	-	-	Tray	0.5A	19
	DJ		1	40–80	4	SMT DIP	-	-	✓	-	-	-	-	-	-	Tray Pipe	0.5A (Power contact 5A)	19
	8800 *1		1.27	20–120	18	DIP	14.1–30	✓	✓	✓ (For interface option available)	IDC	AWG# 28/30	Flat	-	Eject lock	Pipe (Other)	0.5A to 1A (Power contact 2A) *2	16
	8900 *1		1.27	20–120	9	SMT DIP	7–32	✓	✓	✓	IDC Crimping	AWG#30	Flat Discrete	-	Eject lock	Pipe (Emboss)	0.5A 8929E : 1A *2	17
	8300/ 8400		2.54	32–100	8	DIP Wire-Wrap	✓	✓	✓	-	-	-	-	DIN41612 IEC603-2	-	Other	1A/2A	19
	Card Edge Connector		2.54-4	10–120	21	DIP Wire-Wrap	-	-	✓	-	-	-	-	-	-	Other	2A/3A/5A	19

* 1 The 8600/8800/8900 series also has a board-to-cable connector.
* 2 Depending on the number of contacts and connection method, the rated current may exceed the stated current capacity, so please contact our sales representative.
* 3 When mated with “DT0□-060FS-10-T” on the receptacle side.

Category	Series		Pitch (mm)	Contact		Mounting type	Connection type				Harness type			Other specifications				Page No.
				Number of contacts	Available options		Stacking(mm)	Horizontal	Vertical	Harness	Harness processing	AWG number	Cable type	Features / Standards	Lock mechanism	Packaging	Current rating	
Board to cable connectors	XSL		0.25	48	1	SMT	-	-	-	✓	Soldering	AWG #44/46	Micro coaxial	-	-	Reel Other	0.25A	13
	XSLS		0.25	30, 40, 52	3	SMT	-	-	-	✓	Soldering	AWG #44/46	Micro coaxial	-	-	Reel	0.15A–0.3A	13
	ASLS		0.4	30	1	SMT	-	-	-	✓	IDC	AWG#42	Micro coaxial	Non-magnetic	-	Reel	0.25A	13
	USL		0.4	20,30, 40	3	SMT	-	-	-	✓	IDC	AWG#42	Micro coaxial	-	-	Reel Tray	0.25A	13
	USLS		0.4	20,30, 40	3	SMT	-	-	-	✓	IDC	AWG#42	Micro coaxial	-	-	Reel Tray	0.25A	13
	USLS21		0.4	34	1	SMT	-	-	-	✓	Soldering	AWG#40/ 42/44/46	Micro coaxial	-	-	Reel Other	0.25A	13
	SSL		0.5	10,20, 30,40	4	SMT	-	-	-	✓	IDC	AWG#40	Micro coaxial	-	-	Reel Tray	0.3A	13
	TMC		0.5	51	1	SMT	-	-	-	✓	Soldering	AWG#36/ 38/40	Micro coaxial	-	✓	Reel Tray	0.3A–0.5A	13
	TSL		0.55	31	1	SMT	-	-	-	✓	Soldering	AWG#30/ 32/36	RUOTA *4 High performance coaxial cable	32Gbps high-speed transmission	✓	Reel	0.6A–1A	13
Board to cable connectors / Crimp connectors	FWS		2	2, 3, 4, 6, 8	5	-	-	-	-	✓	Crimping	AWG#22/ 24/26/28	Discrete	IP67 (Branch/ relay type available)	✓	Other	3A	14
	FW		5	2,3,4	3	-	-	-	-	✓	Crimping	AWG#16/ 18/20/22	Discrete	IP67 (Branch/ relay type available)	✓	Tray	7A–10A	14
	FJC		0.75	30	1	SMT	-	-	-	✓	Crimping	AWG#28/ 30	Discrete	-	✓	Reel Other	1A	14
	FBC		2	26,36, 40	3	DIP	-	-	-	✓	Crimping	AWG#22/ 24/26	Discrete	Stacking type with side cable entry	E-Lock	Pipe Other	3A	14
	FAS		1.5	4–40	19	DIP	-	-	-	✓	Crimping	AWG#24/ 26/28	Discrete	Drawer (Cable relay type available)	-	Pipe Tray	1.5A–3A	15
	FA		2.5	4-40	18	DIP	-	-	-	✓	Crimping	AWG#22/ 24/26/28	Discrete	Drawer (Cable relay type available)	-	Pipe Tray	2A–3.5A	15
	FTCS		2.5	6-20	4	DIP	-	-	-	✓	Crimping	AWG#18/ 20/22/24/ 26/28	Discrete	Two cable crimpable type	✓	Pipe Other	2A-8.5A	15
	FTC		5.08	6, 10, 12, 20	4	DIP	-	-	-	✓	Crimping	AWG#14/ 16/18/20	Discrete	Drawer Two cable crimpable type (Cable relay type available)	✓	Pipe Tray	5.5A–20A	15

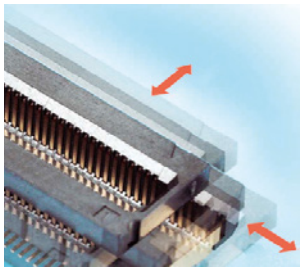
* 4 "RUOTA" is a registered of TOTOKU INC. No.5594596

Product list

Category	Series		Pitch (mm)	Contact		Mounting type	Connection type				Harness type			Other specifications				Page No.
				Number of contacts	Available options		Stacking(mm)	Horizontal	Vertical	Harness	Harness processing	AWG number	Cable type	Features / Standards	Lock mechanism	Packaging	Current rating	
Sockets & switches	SIC01		1.778	28-64	5	DIP	IC connector				-	-	-	SDIP	-	Pipe	1A	20
	ICC05		2.54	8-42	11	DIP	IC connector				-	-	-	-	-	Pipe	1A	20
	LGC		0.8	54	1	SMT	IC connector				-	-	-	FLGA	-	Reel	0.5A	20
	ISC		2.54	8	1	SMT DIP	Card connector				-	-	-	ISO/ IEC7816	-	Tray	1A	20
	KDS		2.54	5	1	DIP	Switch / Others				-	-	-	-	-	Pipe	-	20
	DSP		2.54	2-60	14	DIP	Switch / Others				-	-	-	-	-	Other	1A	20
Battery connectors	7010/7011/ 7030/7040		9 10.16	12-36	3	DIP	✓	-	✓	-	-	-	-	Battery connector	-	Other	5A 7040 : 10A	20
	GC		5	3-10	6	SMT	-	-	-	-	-	-	-	Battery connector	-	Tray	5A (2 contacts)	20
	GD		3	4-10	5	SMT	-	-	-	-	-	-	-	Battery connector	-	Tray	5A (2 contacts)	20
	GF		2	8-10	2	SMT DIP	-	✓	✓	-	-	-	-	Battery connector	-	Reel Tray	7A · 5A (2 contacts) 0.5A (Other contact)	20

Floating Connectors

The floating connector is provided with a floating mechanism for absorbing longitudinal and lateral errors generated when the connector is mounted to the board. By the floating mechanism, errors and misalignment at the time of mating can be absorbed, and breakage of the substrate itself can be prevented.



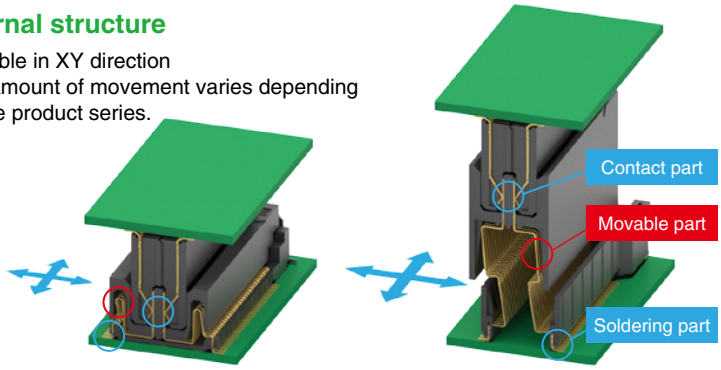
*This image is for illustration purposes.

Multiple connectors can be used together

When mounting multiple connectors on the same board, the floating connector can solve the problem of mounting errors of the connector that could not be absorbed by the conventional connector.
The ability to use multiple connectors has expanded the range of designs, and new designs are being made one after another.

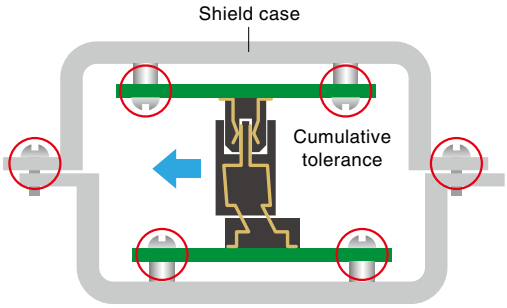
Internal structure

Movable in XY direction
The amount of movement varies depending on the product series.



DT Series　　DT-FS Series

Mating status

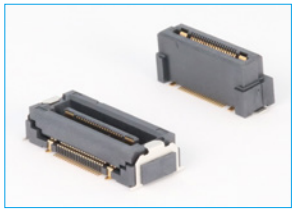


Absorbs misalignment when fixing to shield case, etc.

DT-E Series

0.5mm pitch floating connector / with power terminal

The transmission speed is the same as the DT series, high-speed serial transmission equivalent to SATA standards. The floating amount is secured at ±0.7mm in the XY direction. Seven types of signal terminals are available, ranging from 30 to 140 pins. Stack heights range from 8mm to 30mm.



Specifications

Rated current*1	: 0.4A per contact (Signal contact) 6A per contact (Power contact)
Contact resistance	: 80mΩ max. (Signal contact) 20mΩ max. (Power contact)
Withstand voltage	: 200V AC for 1 minute
Insulation resistance	: 100MΩ min. at 250V DC
Operating temperature*2	: -40˚C to +105˚C

DT-E / DT-E-FS Series Product list

Stack mating

Stack height	Floating amount	Number of contacts						
		30	40	60	80	100	120	140
8mm	±0.7mm	✓	✓	✓	✓	✓	✓	✓
10mm		✓	✓	✓	✓	✓	✓	✓
15mm		✓	✓	✓	✓	✓	✓	✓
20mm		✓	✓	✓	✓	✓	✓	✓
18mm	±1.2mm	✓	✓	✓	✓	✓	✓	✓
20mm		✓	✓	✓	✓	✓	✓	✓
25mm		✓	✓	✓	✓	✓	✓	✓
30mm		✓	✓	✓	✓	✓	✓	✓

DT-E-FS Series

0.5mm pitch floating connector / with power terminal / high stack type (Receptacle height 10mm type)

In combination with the plug side of the DT-E series, it supports a stack height of up to 30mm. The transmission speed is the same as the DT-FS series, supports high-speed serial transmission equivalent to 8Gbps. The floating amount is secured at ±1.2mm in the XY direction. Six types of signal contacts are available, ranging from 30 to 140 pins.

Specifications

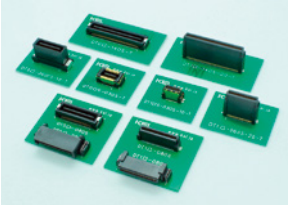
Rated current*1	: 0.4A per contact (Signal contact) *100 pins or less must be energized at the same time. 6A per contact (Power contact)
Contact resistance	: 80mΩ max. (Signal contact) 20mΩ max. (Power contact)
Withstand voltage	: 200V AC for 1 minute
Insulation resistance	: 100MΩ min. at 250V DC
Operating temperature	: -40˚C to +105˚C

* 1 Depending on the number of contacts and connection method, the rated current may exceed the stated current capacity, so please contact our sales representative.
* 2 If you require a high heat resistant type (125˚C compatible product), please contact our sales representative.

DT Series

0.5mm pitch floating connector

DT series is a 0.5mm pitch floating connector that supports high-speed transmission, and has a floating amount ± 0.5mm in both X and Y direction.
It supports 3 variations for Stacked/Vertical/Horizontal mating.
In addition, It has abundant variations such as high stack type and a type with shell.

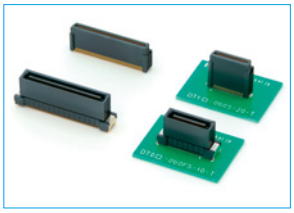


Specifications
Rated current*1 : 0.4A per contact
Contact resistance : 80mΩ max.
Withstand voltage : 200V AC for 1 minute
Insulation resistance : 100MΩ min. at 250V DC
Operating temperature : -40˚C to +105˚C

DT-FS Series

0.5mm pitch floating connector / high stack type(Receptacle height 10 mm type)

In combination with the plug side of the DT series, it supports a stack height of up to 30 mm. The height of the receptacle is 10 mm and the floating amount is ± 1.0 mm in the XY direction. The DT-FS series is capable of high-speed transmission of 8 Gbps and offer space-saving on the PCB than the DT series.



Specifications
Rated current : 0.5A per contact
Contact resistance : 80mΩ max.
Withstand voltage : 200V AC for 1 minute
Insulation resistance : 100MΩ min. at 250V DC
Operating temperature : -40˚C to +105˚C

DT / DT-FS Series Product list

Stack mating

Stack height	Floating amount	Number of contacts								
		30	40	60	80	100	120	140	160	240
8mm	±0.5mm	✓	-	-	-	✓	-	✓	✓	-
10mm		✓	✓	✓	✓	✓	-	✓	✓	✓
11mm		✓	-	-	-	-	*	✓	*	-
15mm		✓	✓	✓	✓	✓	✓	✓	-	-
16mm		✓	-	✓	-	✓	✓	-	*	-
17mm		✓	✓	✓	✓	✓	-	✓	-	-
18mm		✓	✓	✓	✓	✓	-	✓	-	-
19mm		✓	✓	✓	✓	✓	-	✓	-	-
20mm		✓	✓	✓	✓	✓	✓	✓	-	-
18mm	±1.0mm	✓	-	-	-	✓	-	✓	-	-
20mm		✓	✓	✓	✓	✓	-	✓	-	-
21mm		✓	-	-	-	-	-	✓	-	-
25mm		✓	✓	✓	✓	✓	✓	✓	-	-
26mm		✓	-	✓	-	✓	✓	-	-	-
27mm		✓	✓	✓	✓	✓	-	✓	-	-
28mm		✓	✓	✓	✓	✓	-	✓	-	-
29mm		✓	✓	✓	✓	✓	-	✓	-	-
30mm		✓	✓	✓	✓	✓	✓	✓	-	-

* If you have a request for the number of contacts, please contact our sales representative.

Vertical mating

Product type	Floating amount	Number of contacts								
		30	40	60	80	100	120	140	160	240
Straight	±0.5mm	✓	✓	✓	✓	✓	-	✓	-	-
Right angle	±1.0mm									

Horizontal mating

Product type	Floating amount	Number of contacts								
		30	40	60	80	100	120	140	160	240
Right angle	±0.5mm	✓	✓	✓	✓	✓	-	✓	-	-

* We are planning to develop variations one by one, so if you have a request for the number of contacts or stack height that is not described, please contact our sales representative.

DT-S Series

0.5mm pitch floating connector / with shell type

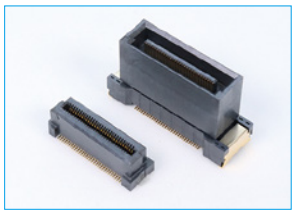
With shell suitable for ESD / EMC protection. It supports high-speed serial transmission equivalent to the SATA standard. Floating amount ±0.5mm in both X and Y directions. Variations in the number of contacts are 30, 40 and 100 pins. 2 Variations for Stacked / Vertical mating.

Specifications
Rated current*1 : 0.4A per contact
*140 pins or less must be energized at the same time.
Contact resistance : 80mΩ max.
Withstand voltage : 200V AC for 1 minute
Insulation resistance : 100MΩ min. at 250V DC
Operating temperature : -40˚C to +105˚C

DT12/13 Series

0.5mm pitch floating connector / high heat resistance type (125°C)

DT12/13 series is a high heat resistant type floating connector that can withstand up to 125°C. The effective mating length is 1.5mm, ensuring stable contact quality. The number of pins is 60 pins and the stack height is 18mm. Floating amount ±1.0mm in both X and Y directions.



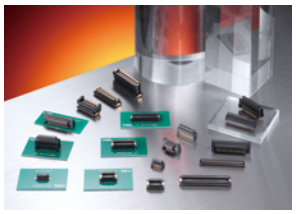
Specifications
Rated current*1 : 0.4A per contact
*When mated with "DT0☐-060FS-10-T" on the receptacle side.
Contact resistance : 80mΩ max.
Withstand voltage : 200V AC for 1 minute
Insulation resistance : 100MΩ min. at 250V DC
Operating temperature : -40˚C to +125˚C

* 1 Depending on the number of contacts and connection method, the rated current may exceed the stated current capacity, so please contact our sales representative.

DY Series

0.5mm pitch floating connector

The floating amount of the DY series is ± 0.5 mm in X and Y directions, and has a stable contact with an effective mating length of 1.25 mm. Mating variations are stack connection and vertical connection.



Specifications

Rated current*1	: 0.4A per contact [L Type] 0.3A per contact
Contact resistance	: 80mΩ max. [L Type]100mΩ max
Withstand voltage	: 200V AC for 1 minute
Insulation resistance	: 100MΩ min. at 250V DC
Operating temperature	: -40˚C to +85˚C

DY Series Product list

Stack mating

Stack height	Floating amount	Number of contacts							
		30	40	50	60	80	100	120	140
5mm	±0.5mm	✓	✓	✓	✓	✓	✓	✓	✓
6mm		✓	✓	✓	✓	✓	✓	✓	✓
7mm		✓	✓	✓	✓	✓	✓	✓	✓
8mm		-	-	-	✓	✓	✓	✓	✓
9mm		-	-	-	✓	✓	✓	✓	✓
10mm		-	-	-	✓	✓	✓	✓	✓
11mm		-	-	-	✓	✓	✓	✓	✓
12mm		-	-	-	✓	✓	✓	✓	✓
13mm		-	-	-	✓	✓	✓	✓	✓
14mm		-	-	-	✓	✓	✓	✓	✓

Vertical mating

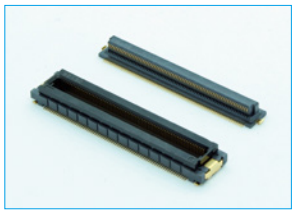
Product type	Floating amount	Number of contacts							
		30	40	50	60	80	100	120	140
Straight	±0.5mm	✓	✓	✓	✓	✓	✓	✓	✓
Right angle									

DY03/04 Series

0.5mm pitch floating connector / high heat resistance type (105°C)

The operating temperature supports up to +105°C. Floating amount ±0.5mm in both X and Y directions. Six types of signal contacts are available, ranging from 50 to 140 pins. Stacked mating heights of 5, 11, 12, 13 and 14mm.

*Stack height 11mm-14mm type can be used in an environment of +105°C by mating with DY1☐-☐☐☐FSB-☐.



Specifications

Rated current*1	: 0.4A per contact
Contact resistance	: 80mΩ max.
Withstand voltage	: 200V AC for 1 minute
Insulation resistance	: 100MΩ min. at 250V DC
Operating temperature	: -40˚C to +105˚C

DUS Series

0.4mm pitch floating connector / high heat resistance type (125°C)

Transmission characteristics that support high-speed serial transmission of 16Gbps (NRZ,Sdd21:-3dB,@8GHz). Floating amount ±0.4mm in both X and Y directions. Stack height is 3mm. From 40 to 200 pin available. Operating temperature up to +125°C.

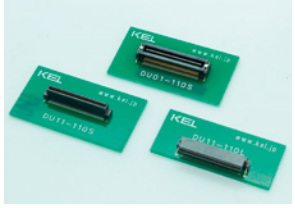
Specifications

Rated current*1	: 0.4A per contact *In the case of simultaneously energizing: 60 pin or less.
Contact resistance	: 80mΩ max.
Withstand voltage	: 200V AC for 1 minute
Insulation resistance	: 100MΩ min. at 250V DC
Operating temperature	: -40˚C to +125˚C

DU Series

0.4mm pitch floating connector

The contact pitch is 0.4mm, but the floating amount is ± 0.4mm in both X and Y direction.
The effective mating length is 1.2mm, ensuring stable contact.
Compared with the DY series, the occupied area of the printed circuit board is reduced by 48% on the plug side and 31% on the receptacle side.
The number of pins can be multi-pole, and there are five kinds of products with up to 200 pins.



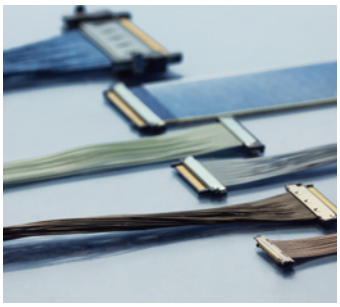
Specifications

Rated current*1	: 0.4A per contact
Contact resistance	: 100mΩ max.
Withstand voltage	: 200V AC for 1 minute
Insulation resistance	: 100MΩ min. at 250V DC
Operating temperature*2	: -40˚C to +85˚C

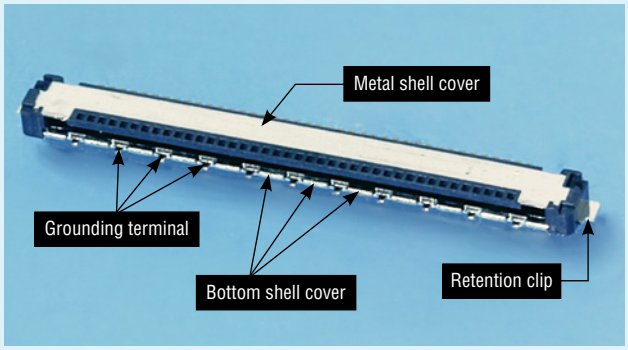
* 1 Depending on the number of contacts and connection method, the rated current may exceed the stated current capacity, so please contact our sales representative.
* 2 High heat resistance type (+ 105°C compatible) is available. Please contact our sales representative for details.

Micro Coaxial Cable Connectors

Micro coaxial cable is very thin and it is excellent in bending resistance and twist resistance. KEL provide a number of micro-coaxial cable connectors excellent in high-speed transmission and noise suppression.
KEL micro coaxial cable connector series has been evaluated for its excellent transmission characteristics and contributing to miniaturization of devices.

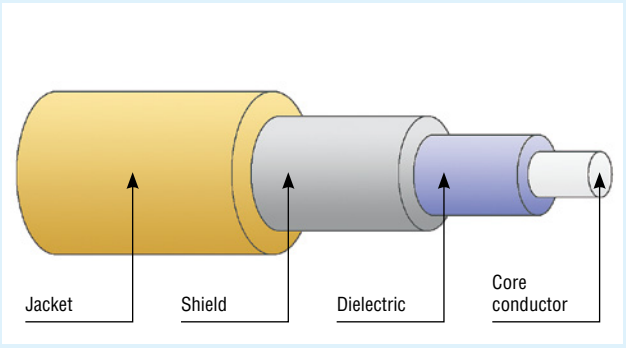


Board side connector structure



KEL micro coaxial cable connector series ensure the noise countermeasures and product strength by the box structure of the metal shell cover and the bottom shell cover. The multi ground terminal contributes the excellent noise characteristics.

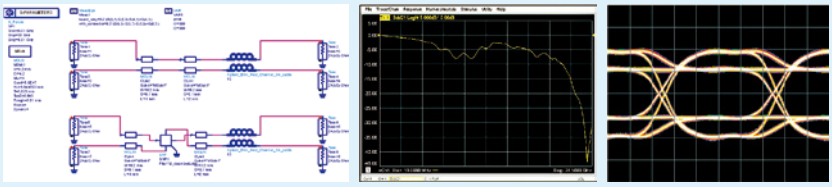
Micro coaxial cable structure



Extremely thin cables, each one has a coaxial structure, and it has excellent transmission characteristics. It has high flexibility and twisting property.

High-speed transmission analysis

KEL responds to the high-speed transmission solution by measuring with its own high-speed transmission analysis and circuit simulation equipment.
If you have inquires about high-speed transmission, please contact your local KEL sales representative.



Micro Coaxial Cable Connector Product List

Series name	Number of contacts	Applicable cable	Product type	Mounting / Process type	Plug / Receptacle	Pitch
XSL00	48	-	Right angle type	SMT	Receptacle	0.25mm
XSL20		AWG#44/46	Straight type	Soldering	Plug	
XSLS00	30, 40, 52	-	Straight type	SMT	Receptacle	
XSLS20		AWG#44/46	Right angle type	Soldering	Plug	
ASLS00	30	-	Straight type	SMT	Receptacle	0.4mm
ASLS20		AWG#42	Right angle type	IDC	Plug	
USL00	20, 30, 40	-	Right angle type	SMT	Receptacle	
USL20		AWG#42	Straight type	IDC	Plug	
USLS00	20, 30, 34, 40	-	Straight type	SMT	Receptacle	
USLS20	20, 30, 40	AWG#42	Right angle type	IDC	Plug	
USLS21	34	AWG#40/42/44/46	Right angle type	Soldering	Plug	
SSL00	10, 20, 30, 40	-	Straight type	SMT	Receptacle	0.5mm
			Right angle type			
SSL20		AWG#40	Straight type	IDC	Plug	
TMC01	51	-	Straight type	SMT	Receptacle	
			Right angle type			
TMC21		AWG#36/38/40	Straight type	Soldering	Plug	
TSL00	31	-	Straight type	SMT	Receptacle	0.55mm
			Right angle type			
TSL21		AWG#30/32/36 (RUOTA)	Straight type	Soldering	Plug	

ASLS Series

0.4mm pitch micro coaxial cable connector / space saving, non-magnetic and high heat resistance type

ASLS series is a connector for micro coaxial cables with stable performance even at 105°C which has great potential despite its small size. Non-magnetic realization that is not affected by magnetic field. The two locking structures create a good click feeling when mating. By shape guide on mating entrance, excellent workability reliable insertion, prevent miss-mating and contacts damage during mating process are achieved.

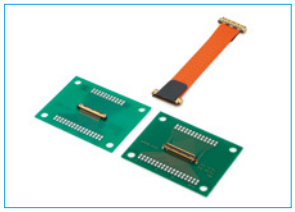
Specifications

Rated current	: 0.25A per contact
Contact resistance	: 100mΩ max.
Withstand voltage	: 200V AC for 1 minute
Insulation resistance	: 100MΩ min. at 250V DC
Operating temperature	: -40˚C to +105˚C
Applicable cable	: AWG#42 Micro coaxial cables

TSL Series

0.55mm pitch high performance coaxial harness

The TSL series is a harness specialized for high-speed transmission.*1
32Gbps high-speed transmission.
The cable uses "RUOTA"*2 manufactured by TOTOKU INC.
KEL also guarantees the quality of harness products.
Equipped with a lock mechanism that is easy to insert and remove.



Specifications

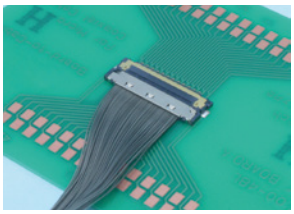
Rated current	: 0.6A to 1A per contact (Depending on cable used)
Contact resistance	: 100mΩ max.
Withstand voltage	: 200V AC for 1 minute
Insulation resistance	: 100MΩ min. at 250V DC
Operating temperature	: -40˚C to +85˚C
Applicable cable	: AWG#30/32/36 Coaxial cables

* 1 TSL series is only available as a complete harness.
* 2 "RUOTA" is a registered of TOTOKU INC. No.5594596

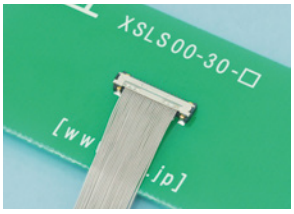
XSL/XSLS Series

0.25mm pitch micro coaxial cable connector

The XSL and The XSLS series are the industry's smallest narrow pitch connectors.
The XSLS series supports stack connection and saves space on the board compared to the XSL series.



XSL Series



XSLS Series

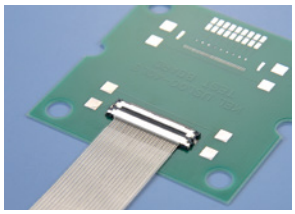
Specifications

Rated current	: [XSL] 0.25A per contact [XSLS] 0.15A to 0.3A per contact (Depending on cable used)
Contact resistance	: 100mΩ max.
Withstand voltage	: [XSL] 90V AC for 1 minute [XSLS] 100V AC for 1 minute
Insulation resistance	: 50MΩ min. at 100V DC
Operating temperature	: -40˚C to +85˚C
Applicable cable	: AWG#44/46 Micro coaxial cables

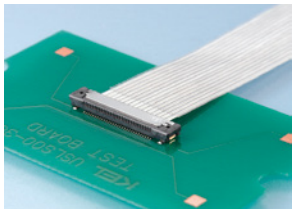
USL/USLS Series

0.4mm pitch micro coaxial cable connector

The USL series is a thin connector with a mounting height of 1.0 mm.
The USLS series supports stack connection and saves space on the board compared to the USL series.



USL Series



USLS Series

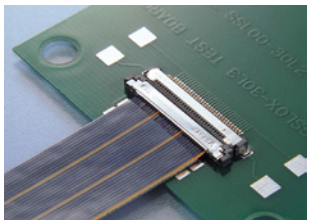
Specifications

Rated current	: 0.25A per contact
Contact resistance	: 100mΩ max.
Withstand voltage	: 200V AC for 1 minute
Insulation resistance	: 100MΩ min. at 250V DC
Operating temperature	: -40˚C to +85˚C
Applicable cable	: [USL/USLS] AWG#42 Micro coaxial cables [USLS21] AWG#40/42/44/46 Micro coaxial cables

SSL Series

0.5mm pitch micro coaxial cable connector

SSL series is 0.5 mm pitch connector for micro coaxial cable connector.
SSL series board connectors has straight type and right angle type.
SSL series pin variation has 4 kinds, 10, 20 30 and 40 pins.



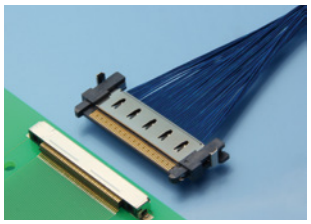
Specifications

Rated current	: 0.3A per contact
Contact resistance	: 100mΩ max.
Withstand voltage	: 200V AC for 1 minute
Insulation resistance	: 100MΩ min. at 250V DC
Operating temperature	: -40˚C to +85˚C
Applicable cable	: AWG #40 Micro coaxial cables

TMC Series

0.5mm pitch micro coaxial cable connector for high speed transmission

TMC series is 0.5 mm pitch micro coaxial cable connector.
It is suitable for high-speed differential transmission (TMDS, LVDS) applications.
TMC cable connector has a locking mechanism.

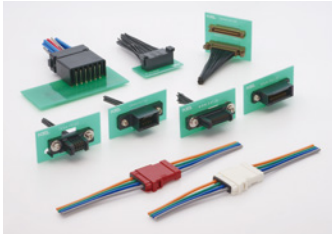


Specifications

Rated current	: 0.3A to 0.5A per contact (Depending on cable used)
Contact resistance	: 50mΩ max.
Withstand voltage	: 200V AC for 1 minute
Insulation resistance	: 100MΩ min. at 250V DC
Operating temperature	: -40˚C to +85˚C
Applicable cable	: AWG #36/38/40 Micro coaxial cables

Crimp Connectors

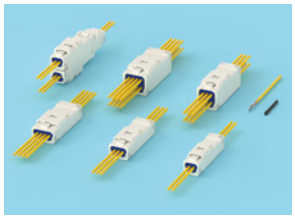
Crimp connectors have long contributed to the electronics industry as connectors for connecting electronic equipment, but in recent years, customers have been demanding high-performance and easy-to-use crimp connectors.
Aiming for a new type of crimp connectors, KEL has developed unique products such as a waterproof connector compliance with IP67, a drawer connector, and a connector that allows two cables to be crimped, and supplies products that meet customer requirements.



FWS Series

2.0mm pitch waterproof connector compliance with IP67

The smallest class external dimensions with 2.0mm pitch waterproof connector. The crimp applicator can be used in common because the crimp contact on the plug side and the receptacle side have the same shape. The built-in cable seal / seal ring reduces man-hours during work. There are two types: cable relay type and branch / relay type.



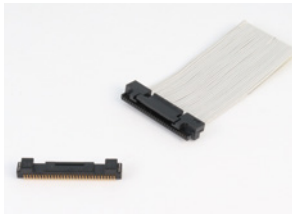
Specifications

Rated current	: 3A max. per terminal
Contact resistance	: [FWSP] 10mΩ max. [FWSB] 20mΩ max.
Withstand voltage	: 1000V AC for 1 minute
Insulation resistance	: 1000MΩ min. at 500V DC
Operating temperature	: -55˚C to +105˚C
Applicable cable	: AWG #22/24/26/28 (0.08 to 0.3sq) (Cable outer diameter : ϕ1.0 to 1.7mm) Discrete cable

FJC Series

0.75mm pitch connector for crimping cable

Reliable mating and connection with click feeling and locking mechanism at connector center. Provided finger pushing area at connector ends for excellent workability when inserting. PCB side connector is a right angle type. Low profile design with 4.2mm connector height.



Specifications

Rated current	: 1A per contact
Contact resistance	: 50mΩ max.
Withstand voltage	: 200V AC for 1 minute
Insulation resistance	: 100MΩ min. at 250V DC
Operating temperature	: -40˚C to +85˚C
Applicable cable	: AWG #28/30 (Cable outer diameter : ϕ0.5 to 0.6mm) Discrete cable

FW Series

5.0mm pitch waterproof connector compliance with IP67

Achieved the industry's smallest class, low profile and 5.0 mm pitch waterproof connector. Despite its small size, it has excellent dustproof and waterproof compliance with IP67. KEL's unique plug contact and receptacle contact concept of the same shape ensures stable contact by performing three-point contact. Since the cable seal is attached, workability during assembly is improved. In addition, wiring can be reduced by branch / relay type.

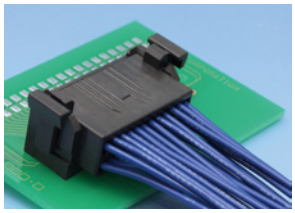
Specifications

Rated current	: 7A to 10A per terminal (Depending on cable used)
Contact resistance	: [FWP] 10mΩ max. [FWB] 20mΩ max.
Withstand voltage	: 1700V AC for 1 minute
Insulation resistance	: 1000MΩ min. at 500V DC
Operating temperature	: -55˚C to +105˚C
Applicable cable	: AWG #16/18/20/22 (0.3 to 1.25sq) (Cable outer diameter : ϕ1.5 to 3.1mm) Discrete cable

FBC Series

2mm pitch connector for discrete cable / Stacking type with side cable entry

FBC series is a board to cable connector of 2mm pitch side cable type with stack connection. By adopting a side cable type, the direction of connector mating and the direction of cable extension are different. This prevents the cable to be easily pulled out and reduces excessive stress due to cable movement. FBC series is equipped with KEL's unique E-lock mechanism, improving the operability of insertion and withdrawal and the connection stability.



Specifications

Rated current	: 3A per contact
Contact resistance	: 40mΩ max.
Withstand voltage	: 650V AC for 1 minute
Insulation resistance	: 1000MΩ min. at 500V DC
Operating temperature	: -40˚C to +85˚C
Applicable cable	: AWG #22/24/26 Discrete cable

FWS / FW series

Benefits of using

The same shape crimp contact on plug side and receptacle side

KEL's waterproof connector uses a uniquely developed the same shape crimp contact on plug side and receptacle side to achieve stable contact. The crimp tool can be used in common because the crimp contact on the plug side and the receptacle side have the same shape.

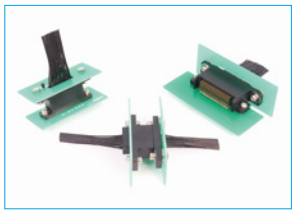
The branch / relay type

When connecting multiple units or sensors, you can save wiring and space by using the branch / relay type.

FAS Series

1.5mm pitch drawer connector

FAS series inherits the same design concept of FA series, such as sufficient resistance to pin buckling, easy mating adjustment, reduced mating stress, and high reliability, but miniaturized with 1.5 mm pitch. A reduction of over 30% in occupied board area has been realized compared to FA series. Absorbs ±3mm gap in X and Y directions when mating. Floating structure of the screwed area enables ±1.4mm displacement in X and Y directions in mated condition.



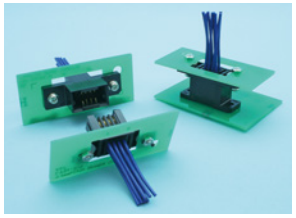
Specifications

Rated current	: 1.5A to 3A per contact (Depending on number of contacts and cable used)
Contact resistance	: 30mΩ max.
Withstand voltage	: 650V AC for 1 minute
Insulation resistance	: 1000MΩ min. at 500V DC
Operating temperature	: -40˚C to +85˚C
Applicable cable	: AWG #24/26/28 (Cable outer diameter : ϕ0.88 to 1.14mm) Discrete cable

FA Series

2.5mm pitch drawer connector

FA series is the drawer connector of 2.5mm pitch. FA Series has the features of pin buckling prevention, easy mating adjustment, reduced stress at mating, and contact reliability. Absorbs ±3mm gap in X and Y directions when mating. Floating structure of the screwed area enables ±1.4mm displacement in X and Y directions in mated condition.



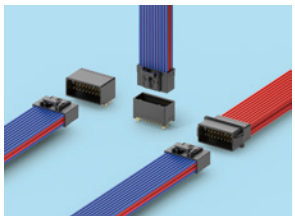
Specifications

Rated current	: 2A to 3.5A per contact (Depending on number of contacts and cable used)
Contact resistance	: 30mΩ max.
Withstand voltage	: 650V AC for 1 minute
Insulation resistance	: 1000MΩ min. at 500V DC
Operating temperature	: -40˚C to +85˚C
Applicable cable	: AWG #22/24/26/28 (Cable outer diameter : ϕ0.88 to 1.7mm) Discrete cable

FTCS Series

2.5mm pitch crimp cable connector / Two cables crimpable type

FTCS has the same features as FTC, and has been made smaller to 2.5mm pitch. The FTCS panel mounting structure allows it to be fixed in any position. By crimping two cables, space is saved and power supply can be transferred between the connectors.



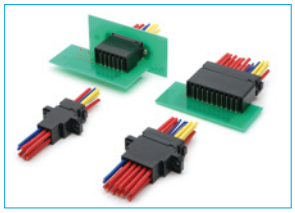
Specifications

Rated current	: 2A to 8.5A per contact (Depending on number of contacts and cable used)
Contact resistance	: 10mΩ max.
Withstand voltage	: 1500V AC for 1 minute
Insulation resistance	: 1000MΩ min. at 500V DC
Operating temperature	: -55˚C to +105˚C
Applicable cable	: AWG #18/20/22/24/26/28 (Cable outer diameter : ϕ0.88 to 2.03mm) Discrete cable

FTC Series

5.08mm pitch crimp cable connector / Two cable crimpable type

Feature of the FTC series is that two cables can be crimped to one contact. It is also possible to crimp only one cable. The ability to crimp two cables to a single contact reduces the number of connector pins and reduces connector size. In addition, the terminal block can be omitted by facilitating power distribution between connectors.
The FTC Series offers a wide range of variations, including drawer types, lockable types, and cable relay types.

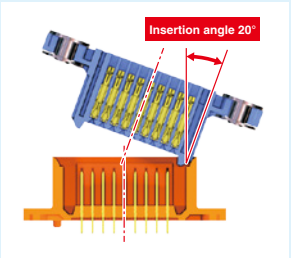


Specifications

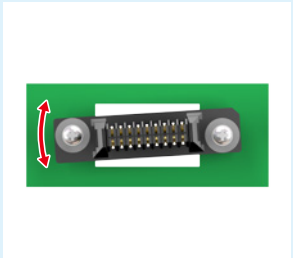
Rated current	: 5.5A to 20A per contact (Depending on number of contacts and cable used)
Contact resistance	: 10mΩ max.
Withstand voltage	: 2200V AC for 1 minute
Insulation resistance	: 1000MΩ min. at 500V DC
Operating temperature	: -55˚C to +105˚C
Applicable cable	: AWG #14/16/18/20 (Cable outer diameter : ϕ1.8 to 3.4mm) Discrete cable

FAS / FA Series

What is a drawer connector?



Insertion guide

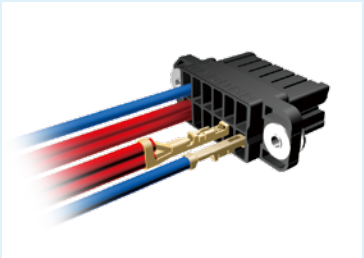


Floating function

The term "drawer" means drawer such as that of a chest of drawers. Drawer connectors are used for unit-to-unit connection, such as connection between the opening and closing panel to that of the main body, in electric appliances such as copiers, printers, gaming equipment, multifunction printers, and fax machines. In principle, because drawer connectors are often used for connecting parts that are not visible, easy mating and strength are required. Therefore, the guiding function of mating, the floating function, and sufficient mating length have been achieved.

FTCS / FTC Series

Crimping two cables

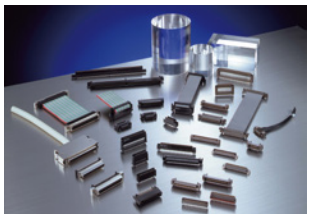


The number of cables or cables needed for crimping is selectable according to the connection in the housing.

By crimping two cables to one contact, you can use the first cable as an input and the second cable as an output, allowing you to wire between connectors. If it crimps one cable to a contact, the number of contacts and cables will be the same, but by crimp two cables to a contact, it can reduce the number of contacts and save space.

1.27mm Pitch Connectors

KEL 1.27 mm pitch connector has been designed for the latest electronic equipment for over 30 years since its launch.
KEL 1.27 mm pitch has 8800 series with plug and receptacle contacts in the same shape, and 8900 series with low profile type.
KEL 1.27 mm pitch connector will continue to contribute to future new designs with high contact reliability and various product variations.



8800 Series

8800 series maintains stable contact pressure by "completely independent 2 point contact".
8800 Board-to-board connector series can be mated in three dimensions, such as stacking, horizontal and vertical mating.
8800 series also has variations of board to wire connector, interface connector and multi pin type connector.

Specifications

Rated current*	: 0.5A to 1A per contact	[8803/13] Power contact; 2A per contact
Contact resistance	: 25mΩ max.	[8825□/8822□/8840/50/55] 30mΩ max.
Withstand voltage	: 650V AC for 1 minute	[8825□] 300V AC for 1 minute
Insulation resistance	: 1000MΩ min. at 500V DC	[8825□] 1000MΩ min. at 250V DC
Operating temperature	: -55˚C to +85˚C	

8800 Series (8800/8801/8802/8803/8810/8811/8812/8813)

Board to board connector

1.27 mm pitch board-to-board connector.
There are straight and right angle type.
With mounting brackets type and power contact type are also available.

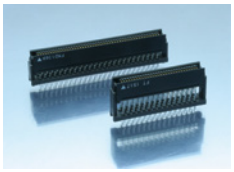
8822/8822E/8825E/8830/8831/8830E/8831E Series

Board to cable connector

1.27 mm pitch board to cable connector.
Flat cable of AWG # 28 and 30 are applicable.
One touch eject lock type is also available.

8832E-FS Series

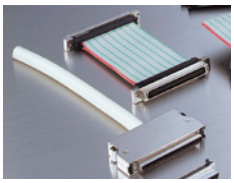
Board to board connector flexible straight type



1.27mm pitch board to board high stack type connector
The stack height is selectable from 18 mm to 30 mm.

8840/8850/8855 Series

Interface connector



1.27 mm pitch interface connector.
Die-cast cover ensures sufficient EMI measures and robustness.
Board to cable and cable relay type are available.

8806/8807/8816/8817 Series

Board to board connector multi-pin type

1.27 mm pitch board to board multi-pin type.
Number of contact is available from 120, 140, 160, 180 and 200pin.
Receptacle has two kind, Straight and Right-angle type are available.

8800 Series Mating Matrix

Number of pins :20, 26, 30, 32, 34, 36, 40, 50, 52, 60, 68, 80, 100

			Receptacle							
			Board to board				Board to cable			Interface
			With flanges 8800/01-□□□-17 0S□-F 8800/01-□□□-17 0L□-F	Without flanges 8802-□□□-170S □-F 8802-□□□-170 L□ -F	With power contacts 8803-□□□-170S □-F 8803-□□□-170 L□ -F	Multi-pin type 8806-□□□-170 □□ -F 8807-□□□-170 □□ -F	Cable side (One touch lock type) 8822-□□□-171 □-F	Cable side (Eject lock type) 8822E-□□□-171 □-F	Cable side (Eject lock type) 8825E/8825R-□□ □-17 5□ -F	Cable side 8840-□□□-174 □D-F
Plug	Board to board	With flanges 8810/11-□□□-17 0S□-F 8810/11-□□□-17 0L □-F	Stack, Horizontal, Vertical (Stack : 14.1mm)	Stack, Horizontal, Vertical (Stack : 14.1mm)	-	-	-	-	-	-
		Without flanges 8812-□□□-170S □-F 8812-□□□-170 L□ -F	Stack, Horizontal, Vertical (Stack : 14.1mm)	Stack, Horizontal, Vertical (Stack : 14.1mm)	-	-	Stack, Vertical (Mating height : 25mm)	-	-	-
		With power contacts 8813-□□□-170S □-F 8813-□□□-170 L□ -F	-	Stack, Horizontal, Vertical (Stack : 14.1mm)	Stack, Horizontal, Vertical (Stack : 14.1mm)	-	-	-	-	-
		Flexible stack 8832E-□□□FS□-□ -F	Stack (Stack : 18-30mm)	Stack (Stack : 18 - 30mm)	-	-	-	-	-	-
		Multi-pin type 8816-□□□-170 □□ -F 8817-□□□-170 □□ -F	-	-	-	Stack, Horizontal, Vertical (Stack : 17.1mm)	-	-	-	-
	Board to cable	PCB side(One touch lock type) 8830-□□□-170S □-F 8830/8831-□□ □-17 0L □-F	Stack, Horizontal, Vertical (Stack : 14.1mm)	Stack, Horizontal, Vertical (Stack : 14.1mm)	-	-	Stack, Vertical (Mating height : 25mm)	-	-	-
		PCB side(Eject lock type) 8830E-□□□-170S □-F 8830E/8831E-□□ □-17 0L□ -F	Stack, Horizontal, Vertical (Stack : 14.1mm)	Stack, Horizontal, Vertical (Stack : 14.1mm)	-	-	-	Stack, Vertical (Mating height : 25mm)	Stack, Vertical (Mating height : 19.5-22.7mm)	-
	Interface	PCB side(Cable plug type) 8850-□□□-170 □D-F 8855-□□□-174 □D-F	-	-	-	-	-	-	-	Stack, Vertical

* 1A per terminal is possible under certain conditions limiting the number of pins to be used. For more details, please contact your local KEL sales representative.

8900 Series

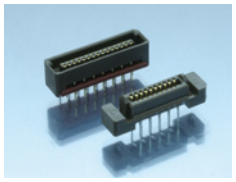
Downsized 1.27 mm pitch connector.
High contact reliability is ensured by single point contact of spring contact shape. There are variations of board to board connector for stack, horizontal and vertical mating types, board to cable connector for flat cable type and crimp type. SMT type connector is also available.

Specifications

Rated current*	: 0.5A per contact	[8929E]1A per contact
Contact resistance	: 40mΩ max.	[8929E] 50mΩ max.
Withstand voltage	: 650V AC for 1 minute	[8925□/8929E] 300V AC for 1 minute
Insulation resistance	: 1000MΩ min. at 500V DC	[8925□/8929E] 1000MΩ min. at 250V DC
Operating temperature	: -55˚C to +85˚C	[8929E] -40˚C to +85˚C

8900 Series (8901/8903/8911/8913)

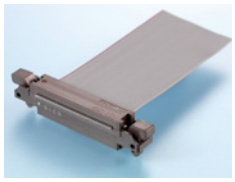
Board to board connector



1.27 mm pitch Low profile type for board to board connectors.
Straight and right angle type are available
Stack height can be selected 7, 8, 9, 10, and 12 mm
With metal hook type is also available.

8925E/8925R/8925/8930E/8931E Series

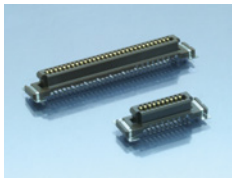
Board to cable connector for 0.635mm pitch flat cable



1.27 mm pitch board to cable connector.
Applicable flat cable is AWG # 30
The lock mechanism can be selected with eject lock or without lock.

8903MS/8913MS Series

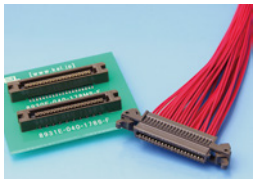
Board to board connector SMT type



1.27 mm pitch low profile type board to board connectors by SMT soldering.
Mating with the 8900 series DIP type is also possible.

8929E/8930E/8931E Series

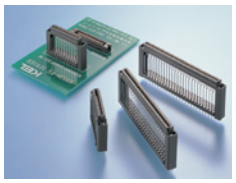
Board to cable connector for discrete cable / crimp type



1.27 mm pitch board to cable connector.
Applicable to discrete cables of AWG # 26/28/30
Cable connection is crimp type.

8903N-FS Series

Board to board connector flexible straight type



1.27 mm pitch board to board high stack type connector.
Stack height can be selected from 20 mm to 32 mm.

8900 Series Mating Matrix

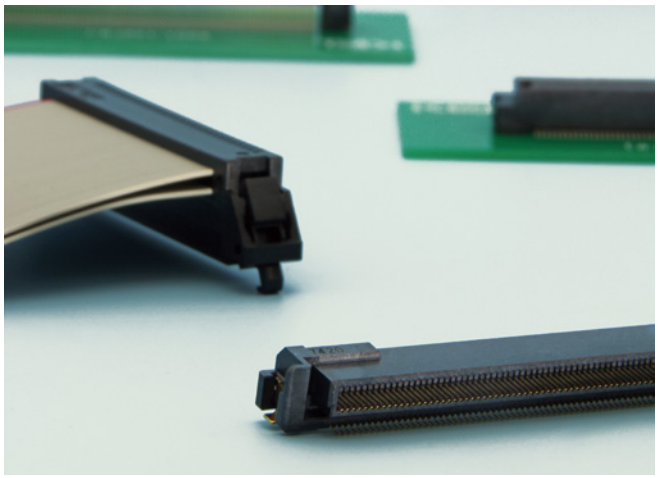
Number of pins :20, 30, 40, 50, 60, 68, 80, 100, 120

		Receptacle						
		Board to board				Board to cable		
		With flanges 8901-□□□-177S□-□-F 8901-□□□-177L□-F	Without flanges 8903-□□□-177S□-□-F	Flexible straight type 8903N-□□□FS□-□-F	SMT type 8903-□□□-177MS□-□-F	Cable side 8925-□□□-179-F	Cable side 8925□-□□□-179-F	Cable side 8929E-□□□
Plug / Board to board	With flanges 8911-□□□-178S□-□-F 8911-□□□-178L□-F	Stack, Horizontal, Vertical (Stack : 7-12mm)	Stack, Vertical (Stack : 7-12mm)	-	-	-	-	-
Plug / Board to board	Without flanges 8913-□□□-178S□-□-F	Stack, Vertical (Stack : 7-12mm)	Stack (Stack : 7-12mm)	Stack (Stack : 20-32mm)	Stack (Stack : 7-10mm)	Stack (Mating : 15-17mm)	-	-
Plug / Board to board	SMT type 8913-□□□-178MS□-A-F	Stack, Vertical (Stack : 7-10mm)	Stack (Stack : 7-10mm)	Stack (Stack : 20-30mm)	Stack (Stack : 7-8mm)	Stack (Mating : 15mm)	-	-
Plug / Board to cable	PCB side 8931E-□□□-178S-F 8931E-□□□-178L-F	-	Stack, Vertical (Stack : 7-10mm)	Stack, Vertical (Stack : 20-30mm)	Stack, Vertical (Stack : 7-8mm)	Stack, Vertical (Mating : 15mm)	Stack, Vertical (Mating : 11.8-15mm)	Stack, Horizontal
Plug / Board to cable	PCB side SMT type 8930E-□□□-178MS-F	-	Stack (Stack : 7.1-10.1mm)	Stack (Stack : 20.1-30.1mm)	Stack (Stack : 7.1-8.1mm)	Stack (Mating : 15.1mm)	Stack (Mating : 11.9-15.1mm)	Stack

* 1A per terminal is possible under certain conditions limiting the number of pins to be used. For more details, please contact your local KEL sales representative.

0.635mm Pitch Connectors

KEL has developed 0.635 mm pitch connector for the demand of miniaturization of next generation industrial connector equipment. 8600 series ensures the contact reliability with effective mating length 2 mm.
SMT solder joint for high density mounting. Pin variation is from 52 to 200pin.
Product variations has Board-to-board for stack, horizontal and vertical connection are possible, board to board eject lock type and board to cable type.



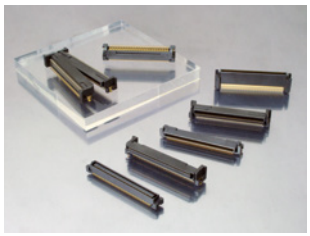
8600 Series Mating Matrix

		Receptacle				
		8601-□□□L (Right angle)	8601-□□□FS□-□-P (Flexible straight)	8601-□□□FL (Right angle)	8602E-□□□S-□ (Straight/with eject lock)	8622□-□□□ (Cable side)
Plug	8611-□□□S-□ (Straight)	Vertical mating	Stack mating 8mm,12mm,16mm	Vertical mating	-	-
	8611H-□□□FL (Right angle)	Horizontal offset mating	Vertical mating	Horizontal mating	-	-
	8630E-□□□S-□ (Straight/Conformed with eject lock)	Vertical mating	Stack mating 8mm,12mm,16mm	Vertical mating	Stack mating 8mm	Board to cable mating

8600 Series

Board to board connector

0.635mm pitch Board-to-board connector.
Three-dimensional mating of vertical, horizontal and stack connection types are available. Effective mating length is 2 mm.



Specifications

Rated current	: 0.5A per contact
Contact resistance	: 50mΩ max.
Withstand voltage	: 200V AC for 1 minute
Insulation resistance	: 100MΩ min. at 250V DC
Operating temperature	: -40˚C to +85˚C

8602E Series

Board to board connector eject lock type

0.635mm Pitch Board to board connector with one touch eject lock mechanism.

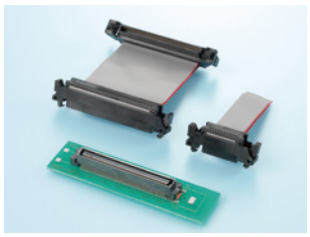
Specifications

Rated current	: 0.5A per contact
Contact resistance	: 50mΩ max.
Withstand voltage	: 200V AC for 1 minute
Insulation resistance	: 100MΩ min. at 250V DC
Operating temperature	: -40˚C to +85˚C

8622E Series

Board to cable connector for 0.635mm pitch flat cable

0.635 mm pitch flat cable connector.
Adopted one-touch eject lock mechanism.
Board side connector can also be mated with board to board connector, so it is possible to combine board to board and board to cable combination.



Specifications

Rated current	: 0.5A per contact
Contact resistance	: 50mΩ max.
Withstand voltage	: 200V AC for 1 minute
Insulation resistance	: 100MΩ min. at 250V DC
Operating temperature	: -40˚C to +85˚C
Recommended cable	: AWG #30 Flat ribbon cable

Board to Board Connectors

87 Series

1mm pitch connector

Specifications

Rated current	: 0.5A per contact
Contact resistance	: 50mΩ max.
Withstand voltage	: 315V AC for 1 minute
Insulation resistance	: 1000MΩ min. at 500V DC
Operating temperature	: -40˚C to +85˚C

DJ Series

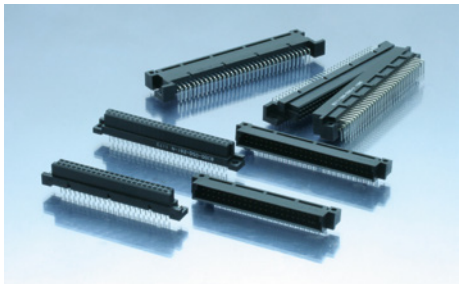
1mm pitch connector for removable media device

Specifications

Rated current	: 0.5A per contact 5A per Power contact
Contact resistance	: 40mΩ max per Signal contact 15mΩ max per Power contact
Withstand voltage	: 300V AC for 1 minute
Insulation resistance	: 1000MΩ min. at 250V DC
Operating temperature	: -55˚C to +85˚C

8300/8400 Series

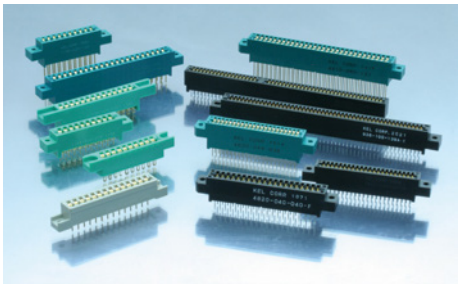
2.54mm pitch connector
Conforms to DIN Standard



Specifications

Rated current	: [8300/8301/8311/8400] 2A per contact [8330/8331/8341/8431/8440] 1A per contact
Contact resistance	: 20mΩ max.
Withstand voltage	: 1000V AC for 1 minute
Insulation resistance	: 1000000MΩ min. at 500V DC
Operating temperature	: -55˚C to +85˚C

Card edge connector

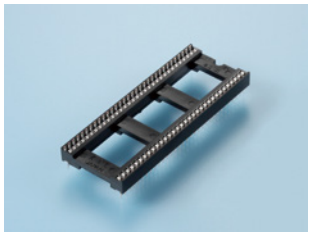


Specifications

Rated current	: [1168/1150N/3250] 2A per contact [4630/4640/936/937/4810/4820/1258N/1156] 3A per contact [3205/3305] 5A per contact
Contact resistance	: [4630/4640/936/937/4810/4820/1150N/3250] 16mΩ max. [1168] 15mΩ max. [1258N/1156/3205/3305] 10mΩ max.
Withstand voltage	: [4630/4640/936/937] 800V AC for 1 minute [1168] 1500V AC for 1 minute [4810/4820/1258N/1156/1150N/3250] 1600V AC for 1 minute [3205/3305] 1800V AC for 1 minute
Insulation resistance	: 5000MΩ min. at 500V DC
Operating temperature	: -55˚C to +85˚C [3250]-30˚C to + 80˚C [1168/1150N/3205/3305] -30˚C to +85˚C [1156]-30˚C to +125˚C

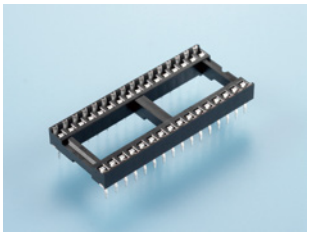
Sockets & Switches

SIC01 Series
Shrink IC Connector



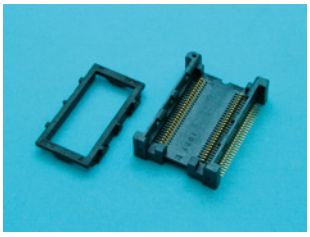
Specifications
Rated current : 1A per contact
Contact resistance : 20mΩ max.
Withstand voltage : 800V AC for 1 minute
Insulation resistance : 5000MΩ min. at 500V DC
Operating temperature : -20˚C to +70˚C

ICC05 Series
Dual Inline Connector



Specifications
Rated current : 1A per contact
Contact resistance : 20mΩ max.
Withstand voltage : 1000V AC for 1 minute
Insulation resistance : 5000MΩ min. at 500V DC
Operating temperature : -20˚C to +70˚C

LGC Series
FLGA Connector

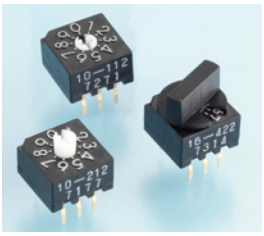


Specifications
Rated current : 0.5A per contact
Contact resistance : 70mΩ max.
Withstand voltage : 250V AC for 1 minute
Insulation resistance : 500MΩ min. at 250V DC
Operating temperature : -40˚C to +85˚C

ISC Series
ISO IC Card(Smart Card) Connector

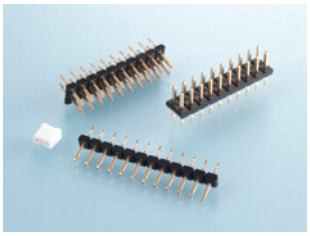
Specifications
Rated current : 1A per contact
1mA -50mA per switch 20V max.
Contact resistance : 40mΩ max per contact.
100mΩ max per switch
Withstand voltage : [ISC3]1000V AC for 1 minute
[ISC5]650V AC for 1 minute
Insulation resistance : 1000MΩ min. at 500V DC
Operating temperature : [ISC3]-55˚C to +105˚C
[ISC5]-40˚C to +85˚C

KDS Series
Rotary DIP Code Switch



Specifications
Rated current and voltage : Non switching
125mA(DC30V)
Switching
125mA(DC30V)
Contact resistance : 100mΩ max.
Withstand voltage : 250V AC for 1 minute
Insulation resistance : 1000MΩ min. at 250V DC
Operating temperature : -25˚C to +85˚C

DSP Series
DIP Shorting Plug



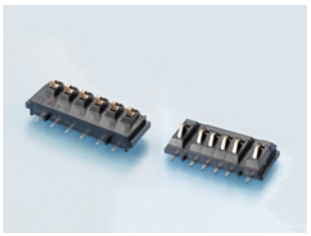
Specifications
Rated current : 1A per contact
Contact resistance : 20mΩ max.
Withstand voltage : 1000V AC for 1 minute
Insulation resistance : 1000MΩ min. at 500V DC
Operating temperature : -55˚C to +85˚C

Battery Connectors

7010 / 7011 / 7030 / 7040 Series
Terminal Block Connector

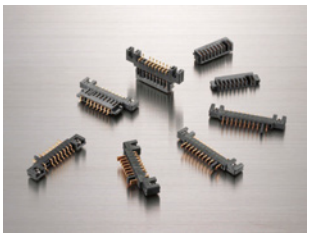
Specifications
Rated current : 5A per contact [7040] 10A per contact
Contact resistance : 16mΩ max.
Withstand voltage : 2000V AC for 1 minute
Insulation resistance : 5000MΩ min. at 500V DC
[7040] 1000MΩ min. at 500V DC
Recommended cable : Stranded Wire: 2.0mm² max
Single Wire : 1.6mm MAX
[7040] Φ0.3-2.0mm
(With Crimp Terminal)

GC / GD Series
5mm pitch / 3mm pitch
1 piece Battery Connector



Specifications
Rated current : [GC Series]5A DC per contact
(2 contacts max.)
[GD Series]5A DC per contact
(2 contact only at both ends)
Contact resistance : 30mΩ max.
Withstand voltage : 650V AC for 1 minute
Insulation resistance : 500MΩ min. at 500V DC
Operating temperature : -55˚C to +85˚C

GF Series
2mm pitch 2 piece Battery Connector

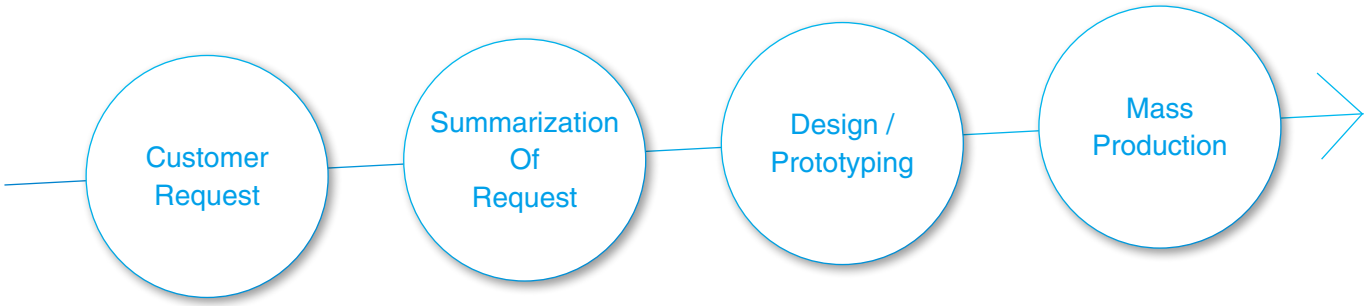


Specifications
Rated current : [GF0□X GF1□]
7A per contact(2 contacts only)
0.5A per contact(other contact)
[GF2□X GF1□/31]
5A per contact(2 contacts only)
0.5A per contact(other contact)
Contact resistance : 20mΩ max.
Withstand voltage : 650V AC for 1 minute
Insulation resistance : 500MΩ min. at 500V DC
Operating temperature : -55˚C to +85˚C

Customized Harness

KEL provides wire harnesses that assemble cable connectors and cables.
KEL harness specialist designs the whole harness, and KEL procures cable components. Therefore, customers just place an order with harness part number to KEL.
KEL also makes quality assurance of harness goods.
For KEL standard specification harness products, KEL easy order system is maintained.
KEL provides customers with harness products with the merits of connector makers and abundant know-how of harness business.

Custom Harness Process



Custom Harness Examples

[Noise Suppression]
Ferrite Core

[Sheilding]
Removal of Sheath

[Cable Protection]
Braided Sleeve

[Sheilding]
Drain Wire

[Cable Bundling]
Shrinkable Tube

[Cable Bundling]
PTFE Tape

[Cable Bundling]
Shrinkable Tube

[Cable Bundling]
Tape

[Cable Bundling]
Cable Tie

[Noise Suppression]
Metal Shell

[Cable Protection]
Tape

[Cable Bundling]
Spiral Tube

For inquiries about customized harness solutions, please contact your local KEL sales representative.

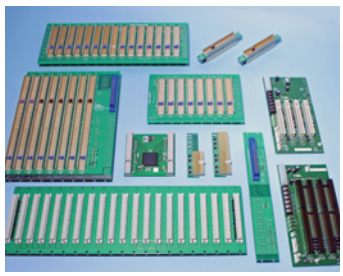
Bus Rack

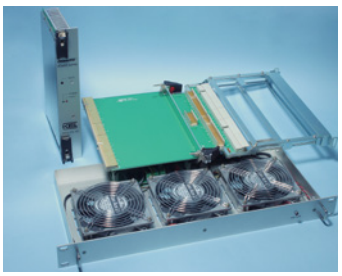
KEL rack products have over 40 years of experience, and we have a consistent system of design, development, manufacturing and evaluation
KEL design and manufacture VME, CPCI, industrial buses, various backplanes, bus racks, peripheral equipment and parts.

Bus Rack Standard Products

We have a large range of standard products consisting from CPCI,VME etc, standards compliant bus as well as bus rack, back plane, option unit and option parts.


Bus Rack


Back Plane


Option Unit

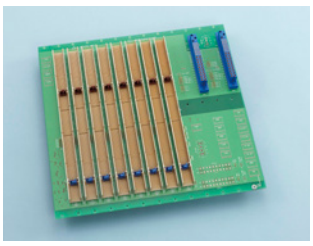

Option Parts

KEL Custom Rack (Customized Product)

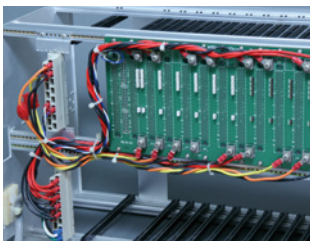
KEL develops custom-made products of KCR (KEL CUSTOM RACK) that make full use of know-how in the market. Custom-made products can handle a wide range from standard change to full custom design. It is also possible to process special orders such as backplanes and bus racks alone.
KCR system manages not only the rack design but also the procurement of related equipment and parts mounted on the rack, it can reduce customer's processing time as a result.

Customized Product Examples


Rack
Single Unit Rack

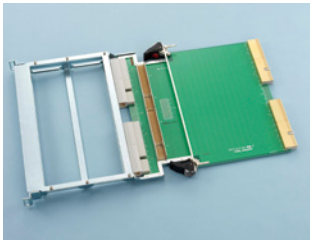

Back Plane
Single Unit Back Plane


Option Unit
Single Unit Option Unit


Bus Rack
Connection example


Bus Rack
Rack + Back Plane


Bus Rack
Rack + Back Plane
+ Option Unit


Evaluation Jig
Extension Boards

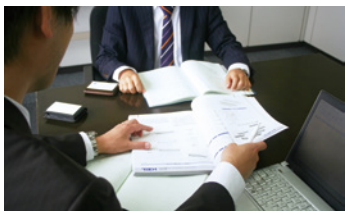

All-In-One
Rack + Back Plane
+ Option Unit
+ Connection, Accessories

For inquiries about customized rack products, please contact your local KEL sales representative.

Customization Flow Chart

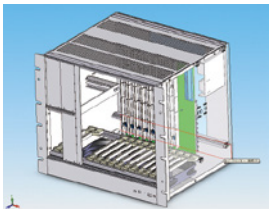
Summarization of required specifications

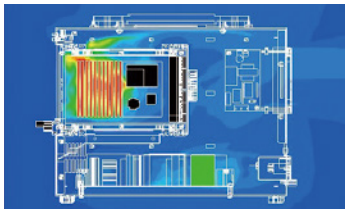
Upon the meeting with customer, we wil summarize the size, specification, and conditions.



Design · Design Verification

According to our customers' design images, we will actually use 3D CAD for designing. In each steps of the design phase we check if the design is appropriate according to the drawing and try to realize our customer images as much as possible. If necessary, thermal simulation, transmission characteristics confirmation can be conducted.





Finalizing the specifications · Ordering

When the final specifications are fixed, we will have our customers place their order. KEL will procure all of the necessary parts (electrical parts / mechanical parts), and will also set up all processes such as board mounting · rack assembly.

Production · Assembly · Build In

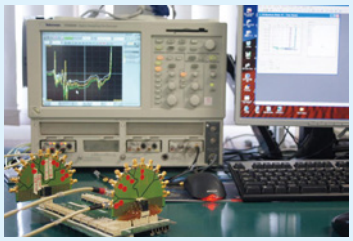
According to our process, board mounting, rack assembly, building in of various units to wire connection will be executed to complete the system rack.

Inspection · Packaging · Shipment

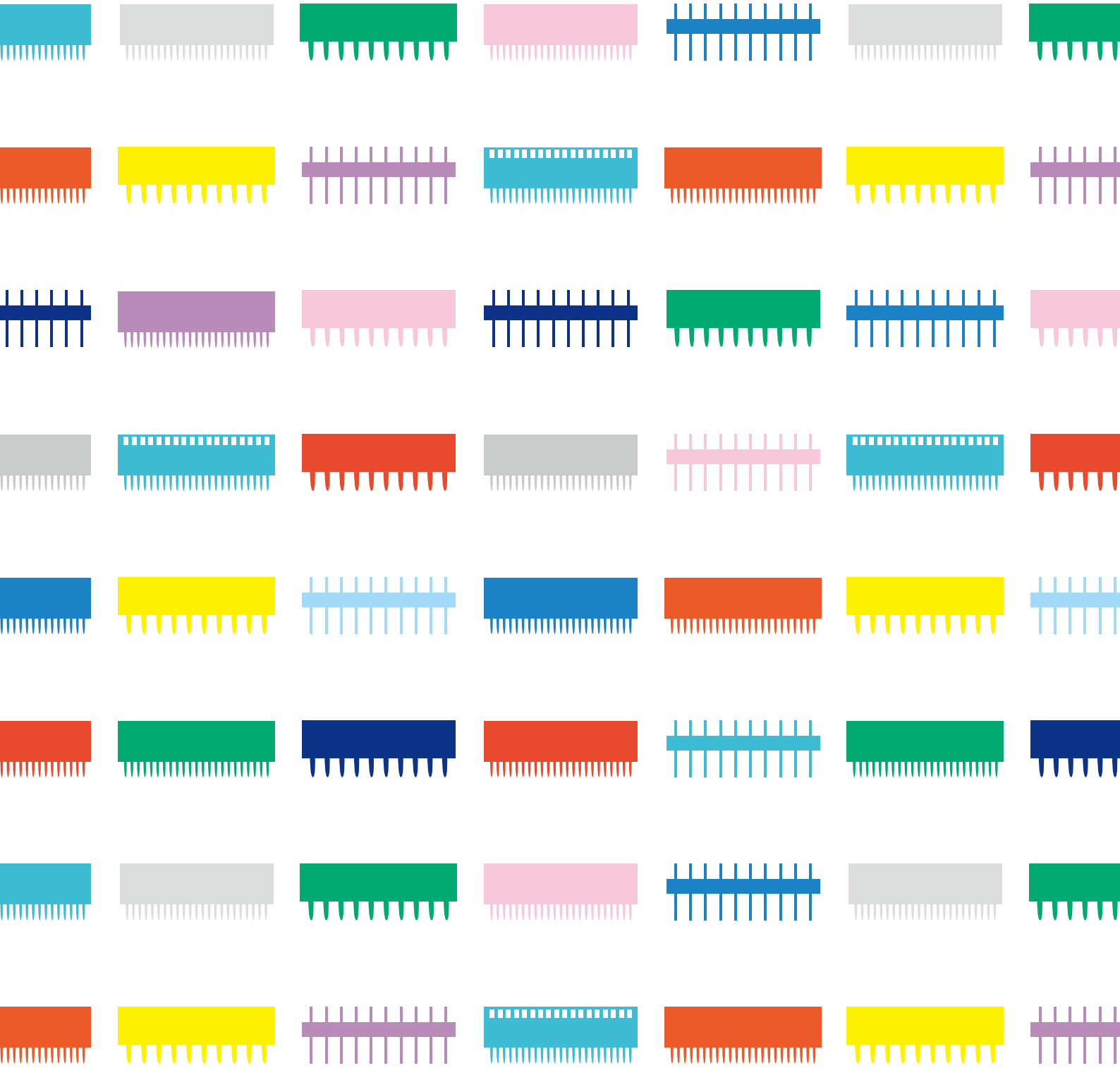
Electrical testing, unit adjustment, various inspections will be conducted and finalized with packaging and shipment, to deliver our products to our customer.

Evaluation and Testing facilities

Environment for electrical and mechanical evaluations are accommodated in our own facility.



Various Thermostats Material Testing Machine, Gas Corrosion Testing Machine, Re-flow Oven, Scanning Electron Microscope, Heat Impact Test Device, Digital Microscope, Various Transmission Characteristic Measuring Machine & Others



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