

KEEL

1.27 mm PITCH 2-PIECE CONNECTORS HANDBOOK



Half-Pitch Connectors

Abundant product variations and mating patterns for the flexible layout design



Outline of KEL half-pitch connectors

8800 Series

8800 series is a half pitch (1.27 mm pitch) connectors developed by KEL original "independent two-point contact" system as a next generation connection. KEL original "Independent two-point contact" system realized high durability and high reliability. Wide variations such as board-to-board (stack, horizontal, vertical connections), board-to-cable, interface, multi-pin type. DIP type only.

8900 Series

8900 series is a half pitch (1.27 mm pitch) connectors developed for small size and thinness. Although it's a one-point contact, high reliability is ensured by a followable contact structure with contact spring properties. Wide variations such as board to board (stack, horizontal, vertical connection), board to cable (flat cable, crimp cable), DIP type and SMT type are available.



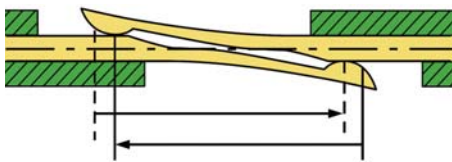
Features of half-pitch connector

Contact concept of 8800 series of "Independent two-point contact"

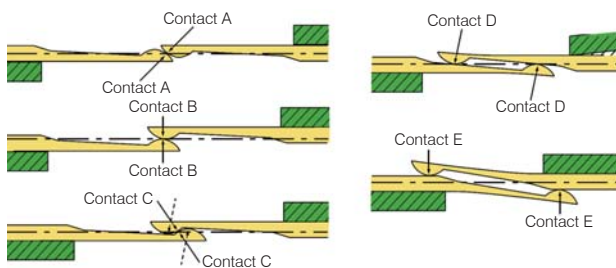
- This "Independent two point contact system" is quite unique. Two contacts of the same shape are vertically mated each other so that the tip of each contact connects the other body.



- Stable contact pressure is constantly applied via two perfectly independent point contacts. This structure considerably improves the contact reliability.
- The surface contact ensures smooth insertion-withdrawal with low force which improves contact durability remarkably.
- By allowing relative movement of contacts, wear of specific parts are reduced, resulting in increased durability of the connector.



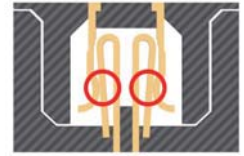
- Due to self-cleaning during the mating process in which the contact points move mutually, foreign matters on the contact surface are removed, preventing conduction failure.



Movement of contacts during mating

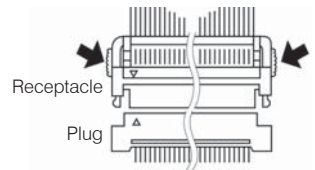
Contact concept of 8900 Series (single-point contact)

As electronic devices become lighter, thinner, and smaller, lower profiles are naturally required for connectors as well. For 8900 series, a unique contact structure that maintains a sufficient contact force and securely-fit connection and has high reliability, in spite of the single-point contact, has been developed.



One-touch lock structure * Products / 8822 Series

The lock is released by lightly pressing the lock spring at both ends of the receptacle with the thumb and index finger, thus the connector can be pulled out.

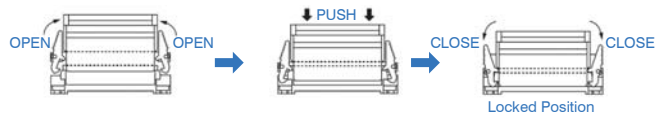


Eject lock type

* Products / 8825E, 8825R, 8822E, 8925E, 8925R Series

● Connecting method

Keep the lock parts at both ends open and push in the connector until locked.



● Removal method

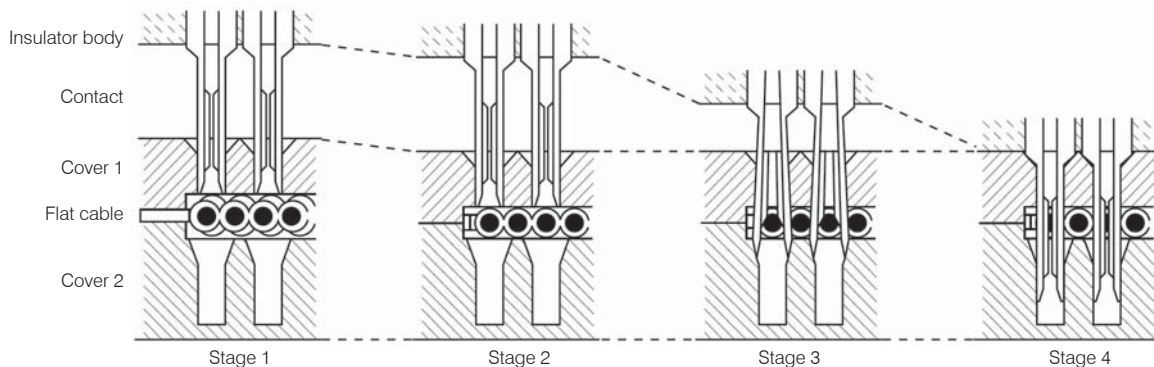
Grasp the lock at each end with one hand and pull the connector out once it has been ejected.



About current capacity

There are cases where rated current can be increased to the indicated current capacity depending on the combination of the number of pin counts and the mating type. Please contact your local KEL sales office.

Insulation Displacement Process









The contact is held in position by the insulator body and the contact forks are guided by Cover #1.

As pressure is applied the cable is aligned in the grooves of Cover #1 and #2

Cover #1 and #2 hold the cable and stabilize the contact/conductor interface. The contact slides through Cover #1 which supports and aligns the cable throughout the termination process.

The contacts terminate the slide into Cover #2. The contact forks are compressed by Cover #2 and form a gas tight termination.

8800 series product list

		8800	8832E-FS	8806/8807	8822E/8822	8825E	8840/8850/8855
Series name							
Pitch		1.27 mm					
No. of contacts		20 ~ 100	20 ~ 100	120 ~ 200	20 ~ 100	20 ~ 100	20 ~ 100
Variation of contacts		12	7	5	13	11	8
Mating type	Stack	○ 14.1 mm	○ 18 ~ 30 mm	○ 17.1 mm	—	—	—
	Horizontal	○	—	○	—	—	—
	Vertical	○	—	○	—	—	—
Current rating *		0.8 ~ 1.0 A (Power-supply terminal: 2 A)	0.8 ~ 1.0 A	0.5 A	1 A	1 A	0.5 A
Mounting type		DIP	DIP	DIP	DIP	DIP	DIP
Recommended cable		—			AWG#28	AWG#30	AWG#28/#30
					Flat ribbon cable	Flat ribbon cable	Discrete wire cable Laminated wire cable Flat ribbon cable
Cable connection		—	—	—	IDC	IDC	IDC
Packing type		Pipe	Pipe	Pipe	Pipe / others	Pipe / others	Pipe / others
Product type		Board to Board Connector			Board to Cable Connector		Interface connector

* The rated current can be increased above the indicated current capacity depending on the number of pin counts and the mating type. Please contact your local KEL sales office.

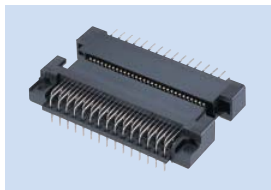
Main specifications

8800 Series

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

Board-to-board connector

1.27-mm-pitch board-to-board connector. Straight and right-angle types are available with or without mounting brackets. Products with power supply terminals are also available, and twelve variations for number of pins are available.



8832E-FS Series

Board-to-board connector / Flexible straight type

1.27-mm-pitch board-to-board connector with selectable stack height. The stack heights are supported from 18 mm to 30 mm in increments of 1 mm. It can be mated with the receptacle side of the 8800 Series.



* A type with mating height of 40 mm is under development.

8806/8807 Series (8806/8807/8816/8817)

Board-to-board connector / multi-pin type

Multi-pin type 1.27-mm-pitch board-to-board connector. The number of pins available are from 120 to 200, for each of which the straight type or right-angle type can be selected.



8822(E)/8825(E) Series

(8822/8822E/8825E/8830/8831/8830E/8831E)

Board-to-cable connector

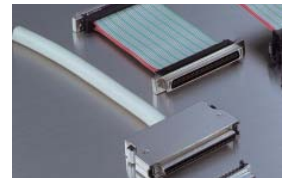
1.27-mm-pitch board-to-cable connector. It is compatible with the AWG#28/30 flat cable. The lock mechanism adopts an eject-lock and one-touch-lock system that is easy to operate.



8840/8850/8855 Series

Interface connector

1.27-mm-pitch interface connector. Thorough EMI countermeasures and robustness have been achieved by adopting a die-cast cover. Board-to-cable and cable-to-relay types are available.



8800 Series Mating Matrix

		RECEPTACLE CONNECTOR					
		8800- □□□ -170S □ -F 8800- □□□ -170L □ -F	8801- □□□ -170S □ -F 8801- □□□ -170L □ -F	8802- □□□ -170S □ -F 8802- □□□ -170L □ -F	8803- □□□ -170S □ -F 8803- □□□ -170L □ -F	8806- □□□ -170S □ -F 8806- □□□ -170L □ -F	8807- □□□ -170S □ -F 8807- □□□ -170L □ -F
PLUG CONNECTOR	8810- □□□ -170S □ -F 8810- □□□ -170L □ -F	*1 HVS ○	*1 HVS ○	*1 HVS ○	No	No	No
	8811- □□□ -170S □ -F 8811- □□□ -170L □ -F	*1 HVS ○	*1 HVS ○	*1 HVS ○	No	No	No
	8812- □□□ -170S □ -F 8812- □□□ -170L □ -F	*1 HVS ○	*1 HVS ○	*1 HVS ○	No	No	No
	8813- □□□ -170S □ -F 8813- □□□ -170L □ -F	No	No	*1 HVS ○	*1 HVS ○	No	No
	8832E- □□□ FS □ - □ -F	*4 VVS ○	*4 VVS ○	*4 VVS ○	No	No	No
	8816- □□□ -170S □ -F 8816- □□□ -170L □ -F	No	No	No	No	*5 HVS ○	*5 HVS ○
	8817- □□□ -170S □ -F 8817- □□□ -170L □ -F	No	No	No	No	*5 HVS ○	*5 HVS ○
	8830E- □□□ -170S □ -F 8830E- □□□ -170L □ -F	*1 HVS ○	*1 HVS ○	*1 HVS ○	No	No	No
	8831E- □□□ -170L □ -F	*1 HV ○	*1 HV ○	*1 HV ○	No	No	No
	8830- □□□ -170S □ -F 8830- □□□ -170L □ -F	*2 HVS ○	*2 HVS ○	*2 HVS ○	No	No	No
	8831- □□□ -170L □ -F	*2 HV ○	*2 HV ○	*2 HV ○	No	No	No
	8850- □□□ -170S □ -F 8850- □□□ -170L □ -F	No	No	No	No	No	No
	8855- □□□ -174 □□ -F	No	No	No	No	No	No

		RECEPTACLE CONNECTOR				
		8825E- □□□ -175 □ -F	8825R- □□□ -175 □ -F	8822E- □□□ -171 □ -F	8822- □□□ -171 □ -F	8840- □□□ -174 □□ -F
PLUG CONNECTOR	8810- □□□ -170S □ -F 8810- □□□ -170L □ -F	No	No	No	No	No
	8811- □□□ -170S □ -F 8811- □□□ -170L □ -F	No	No	No	No	No
	8812- □□□ -170S □ -F 8812- □□□ -170L □ -F	No	No	No	*2 ○	No
	8813- □□□ -170S □ -F 8813- □□□ -170L □ -F	No	No	No	No	No
	8832E- □□□ FS □ - □ -F	No	No	No	No	No
	8816- □□□ -170S □ -F 8816- □□□ -170L □ -F	No	No	No	No	No
	8817- □□□ -170S □ -F 8817- □□□ -170L □ -F	No	No	No	No	No
	8830E- □□□ -170S □ -F 8830E- □□□ -170L □ -F	*1 ○	*1 ○	*3 ○	No	No
	8831E- □□□ -170L □ -F	*1 ○	*1 ○	*3 ○	No	No
	8830- □□□ -170S □ -F 8830- □□□ -170L □ -F	No	No	No	*2 ○	No
	8831- □□□ -170L □ -F	No	No	No	*2 ○	No
	8850- □□□ -170S □ -F 8850- □□□ -170L □ -F	No	No	No	No	*6 ○
	8855- □□□ -174 □□ -F	No	No	No	No	*6 ○

* 1 : 20, 26, 30, 32, 34, 40, 50, 52, 60, 68, 80 and 100 positions are available

* 2 : 20, 26, 30, 32, 34, 40, 50, 52, 60 and 68 positions are available

* 3 : 20, 26, 30, 32, 34, 36, 40, 50, 52, 60, 68, 80 and 100 positions are available





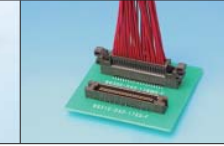
H : Horizontal Mating V : Vertical Mating S : Stacked Mating

* 4 : 20, 30, 40, 50, 60, 80 and 100 positions are available

* 5 : 120, 140, 160, 180 and 200 positions are available

* 6 : 20, 28, 34, 50, 60, 68, 80 and 100 positions are available

8900 series product list

		8900	8900MS	8903N-FS	8925(E)	8929E
Series name						
Pitch		1.27 mm				
No. of contacts		20 ~ 120	20 ~ 120	40 ~ 100	20 ~ 100	30 ~ 68
Variation of contacts		8	8	6	8	5
Mating type	Stack	○ 7 ~ 12 mm	○ 7 ~ 10 mm	○ 20 ~ 32 mm	—	—
	Horizontal	○	—	—	—	—
	Vertical	○	○	○	—	—
Current rating *1		0.5 A	0.5 A	0.5 A	0.5 A	1 A
Mounting type		DIP	SMT	DIP	DIP/SMT	DIP/SMT
Recommended cable		—	—	—	AWG#30 Flat ribbon cable	AWG#26/28/30 *3 Discrete wire cable
Cable connection		—	—	—	IDC	IDC
Packing type		Pipe	Pipe *2	Pipe	Pipe	Pipe
Product type		Board to board connector			Board to cable connector	

*1 There are cases where rated current can be increased to above the indicated current capacity depending on the combination of the number of poles and the mating type. Please contact your local KEL sales office.

*2 Emboss packing is also possible for the 8900MS Series products with 20 to 60 contacts.

*3 Covering outer diameter 1.0 mm max.

Main specifications

8900 Series (8901/8903/8911/8913)

Board-to-board connector

1.27-mm-pitch board-to-board connectors with low profile. Straight and right-angle types are available, with five different stack heights from 7 mm to 12 mm. The option for metal hook can be selected, and eight pin variations are available.



8900MS Series (8903MS/8913MS)

Board-to-board connector compatible with SMT

1.27-mm-pitch board-to-board connector with low profile, compatible with SMT. Mating with the DIP-type products of the 8900 Series is also possible. Eight pin variations are available.



8903N-FS Series

Board-to-board connector with flexible stack height

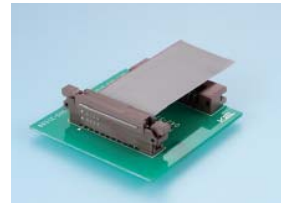
1.27-mm-pitch board-to-board connectors with selectable stack height. The stack heights are supported from 20 mm to 32 mm in increments of 1 mm. It is possible for this product to mate with the plug side of the 8900 Series.



8925(E) Series (8925E/8925R/8925/8930E/8931E)

Board-to-cable connector compatible with 0.635-mm-pitch flat cable

1.27-mm-pitch board-to-cable connector. Applicable for AWG#30 flat cable. For the lock mechanism, Eject lock type and without lock type can be selected.



8929E Series (8929E/8930E/8931E)

Discrete cable connector of a crimp type

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



8900 Series Mating Matrix

		RECEPTACLE CONNECTOR								
		8901-□□□-177S□-A-F	8901-□□□-177S□-B-F	8901-□□□-177S□-D-F	8901-□□□-177L□-F	8903-□□□-177S□-A-F	8903-□□□-177S□-B-F	8903-□□□-177S□-D-F	8903-□□□-177MS□-A-F	8903-□□□-177MS□-B-F
PLUG CONNECTOR	8911-□□□-178S□-A-F	*1 ○ [S] (7mm)	*1 ○ [S] (8mm)	*1 ○ [S] (10mm)	*1 ○ [V]	*1 ○ [S] (7mm)	*1 ○ [S] (8mm)	*1 ○ [S] (10mm)	No	No
	8911-□□□-178S□-C-F	*1 ○ [S] (9mm)	*1 ○ [S] (10mm)	*1 ○ [S] (12mm)	*1 ○ [V]	*1 ○ [S] (9mm)	*1 ○ [S] (10mm)	*1 ○ [S] (12mm)	No	No
	8911-□□□-178L□-F	*1 ○ [V]	*1 ○ [V]	*1 ○ [V]	*1 ○ [H]	*1 ○ [V]	*1 ○ [V]	*1 ○ [V]	No	No
	8913-□□□-178S□-A-F	*1 ○ [S] (7mm)	*1 ○ [S] (8mm)	*1 ○ [S] (10mm)	*1 ○ [V]	*1 ○ [S] (7mm)	*1 ○ [S] (8mm)	*1 ○ [S] (10mm)	*1 ○ [S] (7mm)	*1 ○ [S] (8mm)
	8913-□□□-178S□-C-F	*1 ○ [S] (9mm)	*1 ○ [S] (10mm)	*1 ○ [S] (12mm)	*1 ○ [V]	*1 ○ [S] (9mm)	*1 ○ [S] (10mm)	*1 ○ [S] (12mm)	*1 ○ [S] (9mm)	*1 ○ [S] (10mm)
	8913-□□□-178MS□-A-F	*1 ○ [S] (7mm)	*1 ○ [S] (8mm)	*1 ○ [S] (10mm)	*1 ○ [V]	*1 ○ [S] (7mm)	*1 ○ [S] (8mm)	*1 ○ [S] (10mm)	*1 ○ [S] (7mm)	*1 ○ [S] (8mm)
	8930E-□□□-178MS-F	No	No	No	No	*3 ○ [S] (7mm)	*3 ○ [S] (8mm)	*3 ○ [S] (10mm)	*3 ○ [S] (7mm)	*3 ○ [S] (8mm)
	8931E-□□□-178S-F	No	No	No	No	*3 ○ [S] (7mm)	*3 ○ [S] (8mm)	*3 ○ [S] (10mm)	*3 ○ [S] (7mm)	*3 ○ [S] (8mm)
	8931E-□□□-178L-F	No	No	No	No	*3 ○ [V]	*3 ○ [V]	*3 ○ [V]	*3 ○ [V]	*3 ○ [V]

		RECEPTACLE CONNECTOR									
		8903N-□□□FS□-T-F	8903N-□□□FS□-U-F	8903N-□□□FS□-V-F	8903N-□□□FS□-W-F	8903N-□□□FS□-Y-F	8903N-□□□FS□-Z-F	8925E-□□□-179-F	8925R-□□□-179-F	8925-□□□-179-F	8929E-□□□
PLUG CONNECTOR	8911-□□□-178S□-A-F	No	No	No	No	No	No	No	No	No	No
	8911-□□□-178S□-C-F	No	No	No	No	No	No	No	No	No	No
	8911-□□□-178L□-F	No	No	No	No	No	No	No	No	No	No
	8913-□□□-178S□-A-F	*8 ○ [S] (20mm)	*8 ○ [S] (22mm)	*8 ○ [S] (24mm)	*8 ○ [S] (26mm)	*8 ○ [S] (28mm)	*8 ○ [S] (30mm)	*4 ○	*4 ○	*6 ○	No
	8913-□□□-178S□-C-F	*8 ○ [S] (22mm)	*8 ○ [S] (24mm)	*8 ○ [S] (26mm)	*8 ○ [S] (28mm)	*8 ○ [S] (30mm)	*8 ○ [S] (32mm)	*4 ○	*4 ○	*6 ○	No
	8913-□□□-178MS□-A-F	*8 ○ [S] (20mm)	*8 ○ [S] (22mm)	*8 ○ [S] (24mm)	*8 ○ [S] (26mm)	*8 ○ [S] (28mm)	*8 ○ [S] (30mm)	*4 ○	*4 ○	*6 ○	No
	8930E-□□□-178MS-F	*7 ○ [S] (20.1mm)	*7 ○ [S] (22.1mm)	*7 ○ [S] (24.1mm)	*7 ○ [S] (26.1mm)	*7 ○ [S] (28.1mm)	*7 ○ [S] (30.1mm)	*2 ○	*2 ○	*5 ○	*9 ○
	8931E-□□□-178S-F	*7 ○ [S] (20mm)	*7 ○ [S] (22mm)	*7 ○ [S] (24mm)	*7 ○ [S] (26mm)	*7 ○ [S] (28mm)	*7 ○ [S] (30mm)	*2 ○	*2 ○	*5 ○	*9 ○
	8931E-□□□-178L-F	*7 ○ [V]	*7 ○ [V]	*7 ○ [V]	*7 ○ [V]	*7 ○ [V]	*7 ○ [V]	*2 ○	*2 ○	*5 ○	*9 ○

* 1 : 20, 30, 40, 50, 60, 80, 100 and 120 positions are available

* 5 : 40, 50, 68, 80 and 100 positions are available

* 9 : 30, 40, 50, 60 and 68 positions are available

* 2 : 20, 30, 40, 50, 60, 80 and 100 positions are available (with eject lock)

* 6 : 40, 50, 80 and 100 positions are available

* 3 : 20, 30, 40, 50, 60, 80 and 100 positions are available

* 7 : 40, 50, 80 and 100 positions are available

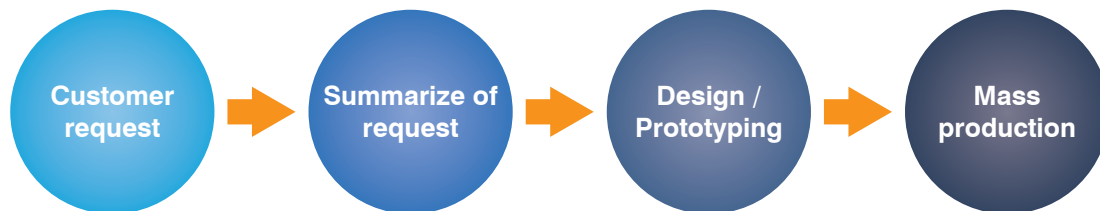
* 4 : 20, 30, 40, 50, 60, 80 and 100 positions are available (without eject lock)

* 8 : 40, 50, 60, 68, 80 and 100 positions are available

[H] : Horizontal Mating [V] : Vertical Mating [S] : Stacked Mating

KEL harness assemblies

KEL provides various cable harness products using half-pitch connectors. Such as, flat cables with 1.27 mm pitch and 0.635 mm pitch, 1.27-mm-pitch I/O cable, and discrete cables are available. In addition, as custom-order products, twisted flat cables, intermittent type flat cables are available. KEL has developed harness technology and can provide not only the connectors alone but harness assemblies as well. KEL original insulation displacement contact is employed for connecting flat cables. 8825E, 8822E, 8925E, 8929E type with eject lock provides customers with harness products with excellent workability.



KEL Company Profile

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

Sales Offices

- Head Office (Tama, Tokyo)
- Utsunomiya Sales Office (Utsunomiya, Tochigi)
- Mito Sales Office (Hitachinaka, Ibaraki)
- Nagoya Sales Office (Nagoya, Aichi)
- Osaka Sales Office (Osaka, Osaka)

Factories

- Yamanashi Factory (Nishi-Yatsushiro, Yamanashi)
- Nagano Factory (Kita-azumi, Nagano)
- Minami-Alps Factory (Minami-Alps, Yamanashi)

www.kel.jp/english/

KEL serves systems from connectors to racks.

KEL CORPORATION

Global Network



More Information
https://www.kel.jp/en/feature/half_lp_2

