



 **MOTORIZED VEHICLES DIVISION**
**Connector Solutions for
Automotive Applications**

About FCI

With operations in 30 countries and sales of 1.25 billion euros in 2008, FCI is a leading manufacturer of connectors. Our 13,000 employees are committed to providing customers with high-quality, innovative products for a wide range of consumer and industrial applications. For more information: www.fci.com

- ▶ FCI Motorized Vehicles offers a comprehensive range of reliable, high-tech and innovative solutions for every automotive application.
- ▶ We manufacture and supply connectors for engine, cockpit, safety and other electronic applications.
- ▶ We have the global footprint and Core Competence Centers to support customers on a global basis. We employ nearly 4 000 people and manufacture our products in plants located in all regions.
- ▶ In our 5 engineering competence centers, we have dedicated engineers who – in a combined effort – develop innovative interconnect solutions adapted to your needs and requirements.
- ▶ Through outstanding quality, cost competitiveness and delivery performances, we are recognized by our customers as a solution provider and their strategic partner.



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Focused

- On core markets, customers and channel partners
- On disciplined execution and total quality management
- On profitable growth and optimum use of resources

Committed

- To satisfying our customers
- To favoring our employees' development
- To maintaining trustworthy relations with our stakeholders

Inventive

- Management
- Thinking
- Solutions

VISION & PHILOSOPHY



Passive Safety Restraints



Cable Assemblies



Convenience & Multimedia



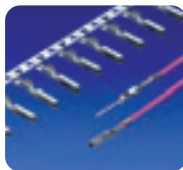
Modules
(doors, seats)



Active safety
(ABS-ESP)



Lighting



Signal
Terminal
Systems



Power
Terminal
Systems



Power
distribution



Powertrain Electronics



Sensors, Injectors
& actuators



www.fciconnect.com

FCI is a world leader in providing cost-effective and innovative terminals systems, wire to wire, wire to device, wire to circuit board, flex interconnect, squib interconnects, ECU packages, pin-headers, high end cable assembly connector solutions and associated application tooling covering applications such as engine compartment, body & chassis, cockpit and multimedia.

How to use our catalog?

- In this catalog, you will find an overview of our main product ranges accompanied by some of our most commonly used part numbers within each connector family.
- Using those references you can go directly to the FCI website home page, www.fciconnect.com, enter the part number in the search box and see the full datasheet and drawing for that part.

The collage illustrates the user journey from a product catalog to a detailed technical drawing. On the left, a catalog page titled 'Mini Sealed Connectors' lists features and technical specifications. In the center, the FCI website's search interface is shown with a search bar and navigation options. On the right, a technical drawing provides multiple views (top, side, and perspective) of a connector, along with a grid of connector symbols and their corresponding part numbers.

Enter the part reference in FCI website to see full datasheet & drawing for that part

Body & Chassis Engine Cockpit

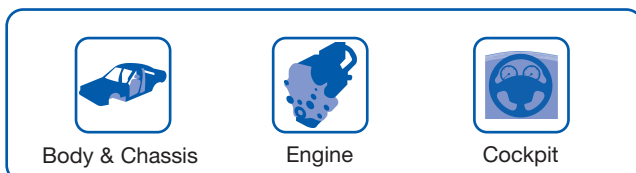


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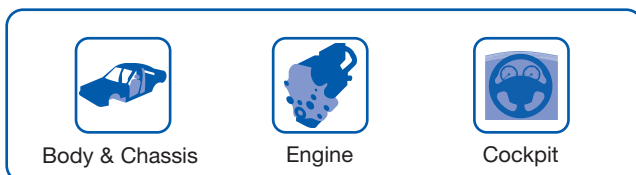
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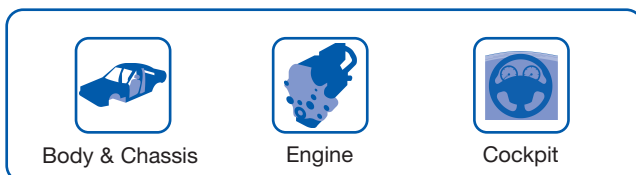
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Terminal Systems Overview

- FCI offers one of the most comprehensive range of terminals available on the market. It includes several versions of terminal systems: APEX®, DCK, DCS, DuoTwin, GTS, MCS and Sicma.
- FCI terminals cover the various vehicle electrical distribution applications in terms of current load (from signal to high power), termination and plating

Size Terminal range	Miniature	Mid current		Power			
	0.64 / 1.0 / 1.2 mm	1.5 mm	1.8 mm	2.8 mm	4.8 mm	6.3 mm	9.5 mm
APEX®	APEX® 1.2 mm 25 A	APEX® 150 25 A		APEX® 2.8 mm 44 A			APEX® 950 188 A
DCK	DCK 0.64 mm 14 A	DCK 1.5 mm 15 A		DCK 2.8 mm 30 A			
DCS		DCS 1.5 mm 15 A		DCS 2.8 mm 30 A	DCS 4.8 mm 55 A	DCS 6.3 mm 50 A	DCS 9.5 mm 75 A
DuoTwin	DuoTwin 0.64 mm 17 A						
GTS	GTS 0.64 mm 12 A	GTS 1.5 mm 20 A					
MCS	MCS 1.0 mm 13 A	MCS 1.5 mm 14 A	MCS 1.8 mm 14 A				
Sicma		Sicma 1.5 mm 19 A		Sicma 2.8 mm 25 A			

Maximum current carrying capacity at 23 °C is given for reference only. This document is non contractual.

APEX® Terminals

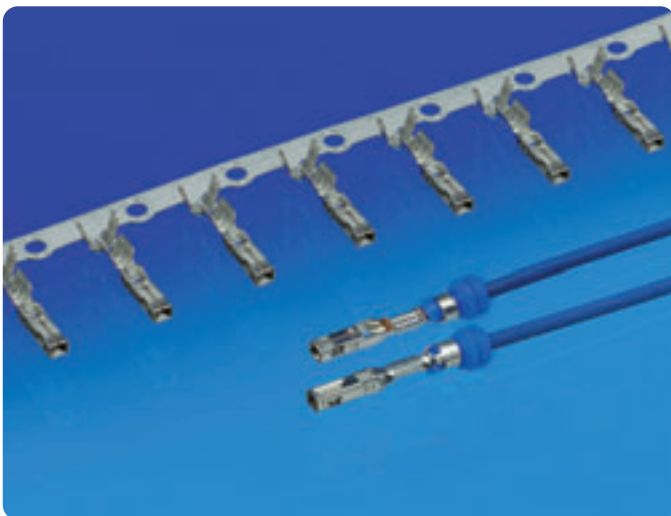
0.64, 1.2, 1.5, 2.8, & 9.5 mm

Features

- Size range: 0.64 to 9.5 mm
- 2-piece APEX® terminal technology
- Clean Body design - select versions feature 180 degree no orientation into the connector
- Tin plated versions available
- High performance Gold plated versions available
- Other platings available upon request: Silver, ...
- Temperature range: -40 to +155 °C
- Single wire seal compatible
- High normal force - low insertion force contacts
- Low to high current carrying capacity
- Suitable for secondary lock



APEX® Micro



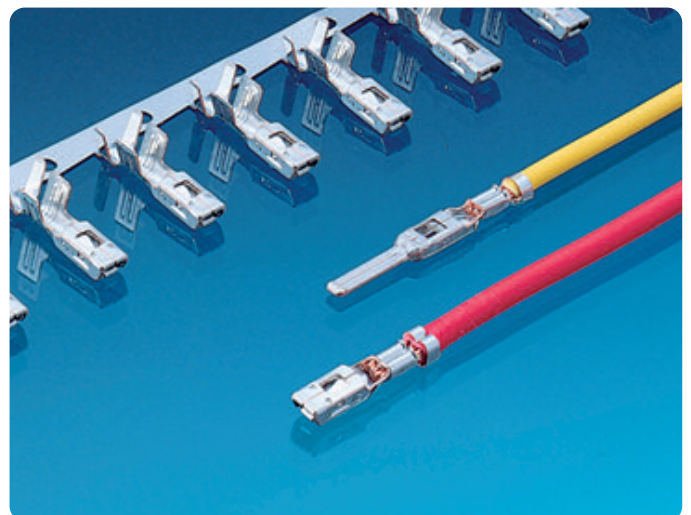
APEX® 1.2 mm



APEX® 150



APEX® 950



APEX® 2.8 mm

Technical characteristics

Terminal size	APEX® Micro	APEX® 1.2	APEX® 150	APEX® 2.8	APEX® 950
Blade range	0.64 - 1.2 mm	1.2 mm	1.5 mm	2.8 mm	9.5 - 1.2 mm
Pitch	2.5 mm	3.5 mm	3.5 mm	5 mm	NA
Wire size range	AWG 18-22	AWG 16-22	AWG 18-22	AWG 10-22	
Contact resistance	< 0.5 mΩ	< 0.5 mΩ	< 0.5 mΩ	< 2 mΩ	< 1 mΩ
Contact mating force	< 2.9 N	< 7 N	< 3.5 N	< 7 N	< 30 N
Contact unmating force	< 2.2 N	< 5 N	< 2.8 N	< 5 N	< 20 N
Maximum Current carrying capacity at 23 °C*	19 A	25 A	25 A	44 A	188 A

*For reference only

Main Part Numbers

	Wire size range	APEX® Micro	APEX® 1.2	APEX® 150	APEX® 2.8	APEX® 950
Female terminals, Tin plated	AWG 10-12 (4-3 mm ²)	-	-	-	54001000	-
	AWG 12 (3 mm ²)	-	-	-	54001208	-
	AWG 14-16 (2 mm ²)	-	-	-	54001400	-
	AWG 16-18 (1.5 mm ²)	-	-	54001625	-	-
	AWG 18-20 (0.8 mm ²)	PPI0001024	54001864	-	54001800	-
	AWG 20-22 (0.5 mm ²)	PPI0001023	-	54002000	-	-
	AWG 22-22 (0.35 mm ²)	-	-	-	54002200	-
	30-40 mm ²	-	-	-	-	F901300
Female terminals SWS, Tin plated	AWG 12 (3 mm ²)	-	-	-	54001202	-
	AWG 16 (2 mm ²)	-	-	-	54001404	-
	AWG 18-20 (0.8 mm ²)	PPI0001024	-	-	54001807	-
Male terminals, Tin plated	AWG 10-12 (4-3 mm ²)	-	-	-	54001001	-
	AWG 14-16 (2 mm ²)	-	-	-	54001401	-
	AWG 16-18 (1.5 mm ²)	-	-	54001626	-	-
	AWG 18-20 (0.8 mm ²)	-	-	-	54001801	-
	AWG 20-22 (0.5 mm ²)	-	-	54002001	-	-
	AWG 22-22 (0.35 mm ²)	-	-	-	54002201	-

SWS Single Wire Seal

Other parts available, please consult our website



DCS Terminals

1.5 & 2.8 mm

Features

- Size range: 1.5 to 2.8 mm
- Two-piece design
- Versions with metal locking lance and clean body versions available
- Terminal Box version: protected contact springs
- Tin, silver and gold plated versions available
- Temperature range -40 to 145 °C (gold plating)
- Single wire seal compatible
- Low contact mating force
- Suitable for secondary lock
- Crimp code on terminal



DCS-2 1.5 mm



DCS-1 2.8 mm Box



DCS-2 2.8 mm



DCS-1 2.8 mm

Technical characteristics

Terminal size	1.5 mm (DCS-2)	2.8 mm (DCS-1)	2.8 mm (DCS-1 Box)	2.8 mm (DCS-2)
Pitch	4 mm	5 mm/6 mm (SWS)	5 mm/6 mm (SWS)	5 mm/6 mm (SWS)
Wire size range	0.22-1.5 mm ²	0.22-2.5 mm ²	0.22-2.5 mm ²	0.22-2.5 mm ²
Contact resistance	< 2 mΩ	< 2 mΩ	< 2 mΩ	< 2 mΩ
Contact mating force	< 7 N	< 9 N	< 9 N	< 9 N
Contact unmating force	< 4 N	< 5 N	< 5 N	< 5 N
Maximum Current carrying capacity at 23 °C*	15 A	30 A	30 A	30 A

*For reference only

Main Part Numbers

	Wire size range	1.5mm (DCS-2)	2.8 mm (DCS-1)	2.8 mm (DCS-1 Box)	2.8 mm (DCS-2)
Female terminals, Tin plated	>0.22-0.35 mm ²	60000511	60010411	60012611	60012811
	0.5-1 mm ²	60000531	60010431	60012631	60012831
	>1-1.5 mm ²	60000541	-	-	-
	>1-2.5 mm ²	-	60010441	60012641	60012841
	>2.5-4 mm ²	-	-	-	-
	>4-5 mm ²	-	-	-	-
	>4-6 mm ²	-	-	-	-
Female terminals, Tin plated (SWS)	>0.22-0.35 mm ²	60000611	60010411	60012611	60012911
	0.5-1 mm ²	60000631	60010431	60012631	60012931
	>1-1.5 mm ²	60100641	-	-	-
	>1-2.5 mm ²	-	60010441	60012641	60012941
	>2.5-4 mm ²	-	-	-	-
	>4-5 mm ²	-	-	-	-
	>4-6 mm ²	-	-	-	-
Male terminals, Tin plated	>0.22-0.35 mm ²	60100611	60110111	60110111	60110611
	0.5-1 mm ²	60100631	60110131	60110131	60110631
	>1-1.5 mm ²	60100641	-	-	-
	1-2.5 mm ²	-	60110141	60110141	60110641
	>2.5-4 mm ²	-	-	-	-
	>4-6 mm ²	-	-	-	-
	>6-10 mm ²	-	-	-	-
Male terminals, Tin plated (SWS)	>0.22-0.35 mm ²	60100711	60110111	60110111	60110711
	0.5-1 mm ²	60100731	60110131	60110131	60110731
	>1-1.5 mm ²	60100741	-	-	-
	1-2.5 mm ²	-	60110141	60110141	60110741
	>2.5-4 mm ²	-	-	-	-
	>4-6 mm ²	-	-	-	-
	>6-10 mm ²	-	-	-	-

SWS Single Wire Seal

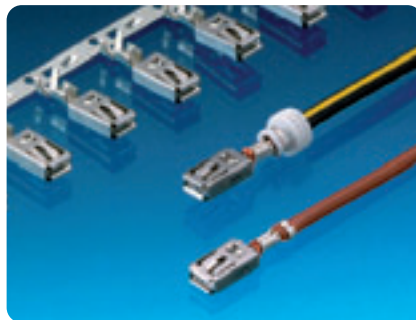
Other parts available, please consult our website



DCS Terminals 4.8, 6.3 & 9.5 mm

Features

- Size range: 4.8 to 9.5 mm
- Two-piece design
- Versions with metal locking lance and clean body versions available
- Terminal Box version: protected contact springs
- Tin, silver and gold plated versions available
- Temperature range -40 to 145 °C (gold plating)
- Single wire seal compatible
- Low contact mating force
- Suitable for secondary lock
- Crimp code on terminal



DCS-1 4.8 mm Box



DCS-1 6.3 mm



DCS-1 9.5 mm



DCS-1 9.5 mm Box

Technical characteristics

Terminal size	4.8 mm (DCS-1 Box version)**	6.3 mm (DCS-1)**	9.5 mm (DCS-1)	9.5 mm (DCS-1 Box version)
Pitch	8 mm	8 mm	11 mm/ 12.5 mm (SWS)	11 mm/ 12.5 mm (SWS)
Wire size range	0.5-5 mm ²	0.5-5 mm ²	2.5-10 mm ²	2.5-10 mm ²
Contact resistance	< 3 mΩ	< 3 mΩ	< 3 mΩ	< 3 mΩ
Contact mating force	< 14 N	< 15 N	< 22 N	< 22 N
Contact unmating force	< 12 N	< 12 N	< 16 N	< 16 N
Max. Current carrying capacity at 23 °C*	55 A	50 A	75 A	75 A

*For reference only

**Clean body version

Main Part Numbers

	Wire size range	4.8 mm (DCS-1 Box)**	6.3 mm (DCS-1)**	9.5 mm (DCS-1)	9.5 mm (DCS-1 Box)
Female terminals, Tin plated	>0.22-0.35mm ²	-	-	-	-
	0.5-1 mm ²	60040431	60040031	-	-
	>1-1.5 mm ²	-	-	-	-
	>1-2.5 mm ²	60040441	60040041	-	-
	>2.5-4 mm ²	60040451	60040051	60070251	60070451
	>4-5 mm ²	60040461	60040061	-	-
	>4-6 mm ²	-	-	60070261	60070461
>6-10 mm ²	-	-	60070271	60070471	
Female terminals, Tin plated (SWS)	>0.22-0.35 mm ²	-	60040031	-	-
	0.5-1 mm ²	60040431	-	-	-
	>1-1.5 mm ²	-	60040041	-	-
	>1-2.5 mm ²	60040441	60040051	-	-
	>2.5-4 mm ²	60040451	-	60070251	60070451
	>4-5 mm ²	60040461	-	-	-
	>4-6 mm ²	-	-	60070261	60070461
>6-10 mm ²	-	-	60070271	60070471	
Male terminals, Tin plated	>0.22-0.35 mm ²	-	-	-	-
	0.5-1 mm ²	-	-	-	-
	>1-1.5 mm ²	-	-	-	-
	1-2.5 mm ²	-	-	-	-
	>2.5-4 mm ²	-	-	60170251	60170251
	>4-6 mm ²	-	-	60170261	60170261
>6-10 mm ²	-	-	60170271	60170271	
Male terminals, Tin plated (SWS)	>0.22-0.35 mm ²	-	-	-	-
	0.5-1 mm ²	-	-	-	-
	>1-1.5 mm ²	-	-	-	-
	1-2.5 mm ²	-	-	-	-
	>2.5-4 mm ²	-	-	60170251	60170251
	>4-6 mm ²	-	-	60170261	60170261
>6-10 mm ²	-	-	60170271	60170271	

SWS Single Wire Seal

Other parts available, please consult our website



DCK Terminals - Miniature & mid-current and power terminals

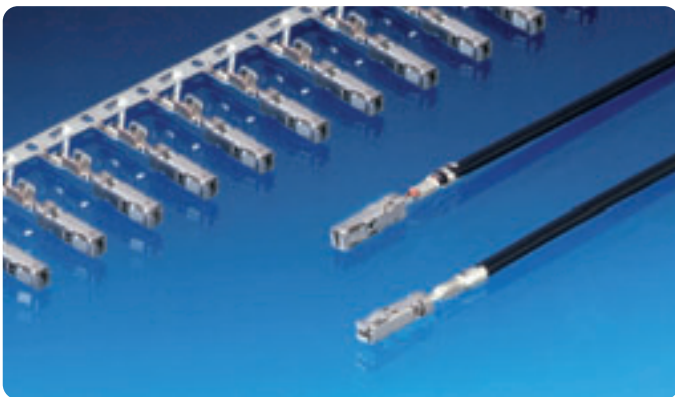
0.64, 1.5 & 2.8 mm

Features

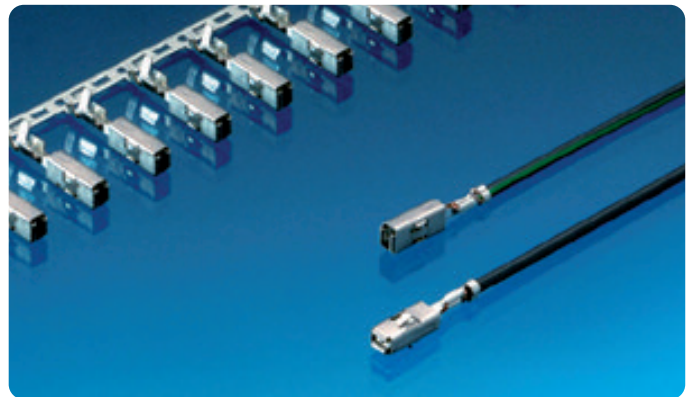
- Size range: 0.64 to 2.8 mm
- One-(0.64 mm) and two-piece (1.5 and 2.8 mm) design
- Versions with metal locking lance available
- Tin, silver and gold plated versions available
- Temperature range -40 to 145 °C (gold plating)
- Single wire seal compatible (1.5 and 2.8 mm)
- Low contact mating force
- Suitable for secondary lock
- DCK 0.64 mm: 4 symmetrical contact points to provide low and constant contact resistance



DCK0.64 mm



DCK 1.5 mm



DCK 2.8 mm

Technical characteristics

Miniature & mid-current and power terminals

	Miniature Terminals	Mid current terminals	Power terminals
Terminal size	0.64 mm	1.5 mm	2.8 mm
Construction	1-piece	2-piece	2-piece
Pitch	2.5 mm	4 mm	5 mm/6 mm (SWS)
Wire size range	0.22 - 0.75 mm ²	0.22-1/2.5 mm ²	0.22-2.5/4 mm ²
Contact resistance	< 3 mΩ	< 3 mΩ	< 3 mΩ
Contact mating force	< 4 N	< 7 N	< 9 N
Contact unmating force	< 3 N	< 4 N	< 5 N
Maximum Current carrying capacity at 23 °C*	14 A	15 A	30 A

*For reference only

Main Part Numbers

	Wire size range	0.64 mm	1.5 mm	2.8 mm
Female terminals, Tin plated	0.22-0.35 mm ²	F983300	60001911	60003611
	0.35 mm ²	-	F127200	-
	0.5-0.75 mm ²	F393300	-	-
	0.5-1. mm ²	-	60001931	60013631
	>1-2.5 mm ²	-	-	60013641
Female terminals, Tin plated (SWS)	0.22-0.35 mm ²	-	60002011	60003711
	0.35 mm ²	-	F327200	-
	0.5-1. mm ²	-	60002031	60013731
	>1-1.5 mm ²	-	60002041	-
	>1-2.5 mm ²	-	-	60013741
	>2.5-4 mm ²	-	-	60013751

SWS Single Wire Seal

Other parts available, please consult our website



DuoTwin Terminals

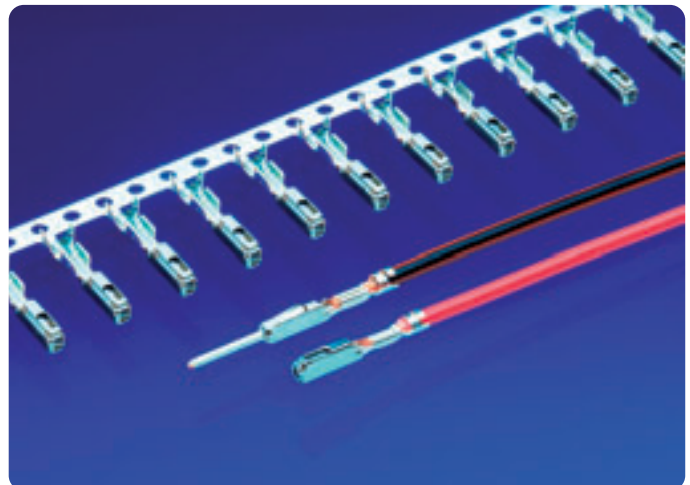
0.64 mm

Features

- Size range: 0.64 mm
- Two-piece design
- Versions with metal locking lance and clean body versions available
- Tin and gold plated versions available
- Temperature range -40 to 145 °C (gold plating)
- Mat seal (clean body version) and single wire seal compatible
- 4 symmetrical contact points to provide low and constant contact resistance
- Suitable for secondary lock



DuoTwin 0.64 mm



DuoTwin 0.64 mm lanceless

Technical characteristics

Terminal size	0.64 mm	0.64 mm lanceless
Pitch	2.54 mm	2.54 mm
Wire size range	0.22-0.75 mm ²	0.22-0.75 mm ²
Contact resistance	< 3 mΩ	< 3 mΩ
Contact mating force	< 3.5 N	< 3.5 N
Contact unmating force	< 3 N	< 3 N
Maximun Current carrying capacity at 23 °C*	17 A	17 A

*For reference only

Main Part Numbers

	Wire size range	0.64 mm	0.64 mm lanceless
Female terminals, Tin plated	0.22-0.5 mm ²	60080111	60081111
	0.5-0.75 mm ²	60080131	60081131
Male terminals, Tin plated	0.22-0.5 mm ²	60181011	-
	0.5-0.75 mm ²	60181031	-

Other parts available, please consult our website



Fingrip Terminals

4.8 & 6.3 mm

Features

- Size range: 4.8, 6.3 mm
- Dimensions according to DIN 46249 standard
- Temperature range: -40 to 125 °C



Fingrip 4.8 mm



Fingrip 6.3 mm

Technical characteristics

Terminal size	4.8 mm	6.3 mm
Wire size range	0.5-1 mm ²	1-2.5 mm ²
Contact resistance	< 3 mΩ	< 3 mΩ
Contact mating force	< 80 N	< 80 N
Contact unmating force	< 20 N	< 20 N
Maximum Current carrying capacity at 23 °C*	14 A	20 A

*For reference only

Main Part Numbers

Female terminals unplated	Wire size range 0.5-1 mm ²	F17	-
Female terminals Tin plated	Wire size range 0.5-1 mm ²	F17TN	-
Female terminals unplated	Wire size range 1-2.5 mm ²	-	F12
Female terminals Tin plated	Wire size range 1-2.5 mm ²	-	F12TN

Finclick Terminals

8 mm

Features

- Flag or 90° terminal ideal for housings in limited spaces
- Temperature range: -40 to 125 °C



Finclick 8 mm

Technical characteristics

Terminal size	8 mm
Wire size range	0.5-2.5 mm ²
Contact resistance	< 3 mΩ
Contact mating force	< 80 N
Contact unmating force	> 20 N
Maximum Current carrying capacity at 23 °C*	22 A

*For reference only

Main Part Numbers

Female terminals Tin plated	Wire size range 0.5-1 mm ²	FBFN20FRXPTB35P
	Wire size range 1-2.5 mm ²	FBFN16FRXPTB35P



GTS Terminals

0.64 & 1.5 mm

Features

- Size range: 0.64 to 1.5 mm
- High performing one-piece terminal
- Lanceless version compatible with mat seal
- Temperature range -40 to 125 °C
- Dual spring design with pre-loaded beam for enhanced contact force
- Low mating - unmating force
- Front protection of active beams



GTS 0.64 mm



GTS 1.5 mm

Technical characteristics

Terminal size	0.64 mm GTS-1	0.64 mm GTS-3	1.5 mm GTS-2	1.5 mm GTS-3
Polarization	Simple	Double	Simple	Double
Pitch	2.2 mm	2.2 mm	3.5 mm	3.5 mm
Wire size range	0.22-0.85 mm ²	0.22-0.85 mm ²	0.50-2 mm ²	0.50-2 mm ²
Contact resistance	< 5 mΩ	< 5 mΩ	< 4 mΩ	< 4 mΩ
Contact mating force	< 5 N	< 5 N	< 6 N	< 6 N
Contact unmating force	< 3 N	< 3 N	< 4 N	< 4 N
Max. Current carrying capacity at 23 °C*	12 A	12 A	20 A	20 A

*For reference only

Main Part Numbers

	Wire size range	0.64 mm GTS-1	0.64 mm GTS-3	1.5 mm GTS-2	1.5 mm GTS-3
Female terminals, Tin plated	0.22-0.35 mm ²	PPI0001619	260CC1S0120	-	-
	0.50-0.75 mm ²	PPI0000489	260CC1S1120	PPI0001580	PPI0000597
	0.75-0.85 mm ²	PPI0000490	260CC1S2120	-	-
	1.25-2 mm ²	-	-	-	PPI0000599
Female terminals for wire tube, Tin plated	0.50-0.75 mm ²	-	-	PPI0001482	PPI0000596
	0.85-1 mm ²	-	-	PPI0001483	PPI0000598
	1.25-2 mm ²	-	-	PPI0001484	PPI0000599
Female terminals SWS, Tin plated	0.50-0.75 mm ²	-	-	F112300	-
	0.85-1 mm ²	-	-	F343100	-
	1.25-2 mm ²	-	-	F443100	-
Male terminals, Tin plated	0.22-0.35 mm ²	-	PPI0000027	-	-
	0.50-0.75 mm ²	-	PPI0000028	-	F151000
	0.75-0.85 mm ²	-	PPI0000042	-	F251000
	1.25-2 mm ²	-	-	-	F351000

SWS Single Wire Seal

Other parts available, please consult our website



HC3 Terminals (Round terminal 1.15 mm)

Features

- Size range: 1.5 mm
- 3 contact points round system
- Protected contact springs
- Temperature range -40 to 125 °C



HC3 1.5 mm

Technical characteristics

Terminal size	1.15 mm (standard)	1.15 mm (compact)
Pitch	3.2 mm	3.2 mm
Wire size range	0.35-0.5 mm ²	0.35-0.5 mm ²
Contact resistance	< 3 mΩ	< 3 mΩ
Contact mating force	< 4 N	< 4 N
Contact unmating force	< 1 N	< 1 N
Max. current carrying capacity at 23 °C*	10 A	10 A

*For reference only

Main Part Numbers

Female terminals	Wire size range 0.35-0.5 mm ²	HC3FBS1PT	HC3SHFBS1PT
Male terminals	Wire size range 0.75-1 mm ²	HC3SHMCZ1PT	HC3SHMCZ1PT

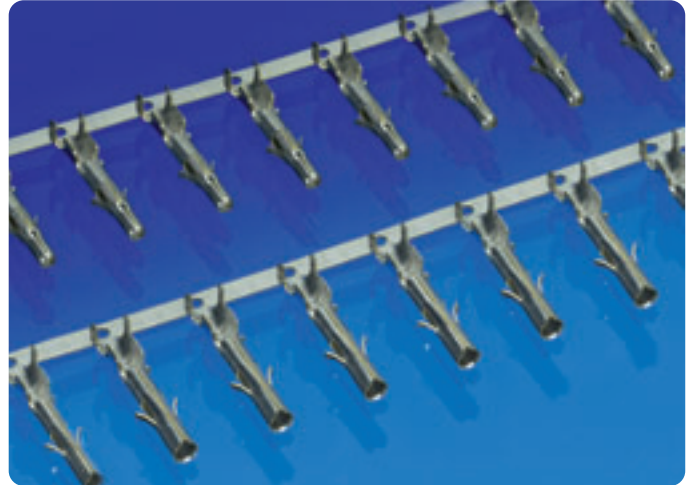
Other parts available, please consult our website



Hylok Terminals (Round terminal 2 mm)

Features

- Dual-locking lances
- Selective Gold plated versions available
- Split pin version for low mating force
- Temperature range : - 55 to + 105 °C



Hylok terminals

Technical characteristics

Terminal size	Ø 2 mm
Pitch	6.35 mm
Contact resistance	2 mΩ
Contact mating force	< 7 N
Contact unmating force	< 4 N
Max. Current carrying capacity at 23 °C*	15 A

*For reference only

Main Part Numbers

Female terminals	Wire size range 0.2-0.8 mm ²	UHC1100BRZ
	Wire size range 0.5-2 mm ²	UHC1200BRZ
Split male terminal	Wire size range 0.2-0.8 mm ²	UHM2100BRZ
Split male terminal	Wire size range 0.5-2 mm ²	UHM2200BRZ
Solid male terminal	Wire size range 0.2-0.8 mm ²	UHM1100BRZ
Solid male terminal	Wire size range 0.5-2 mm ²	UHM1200BRZ

Other parts available, please consult our website



MCS Terminals

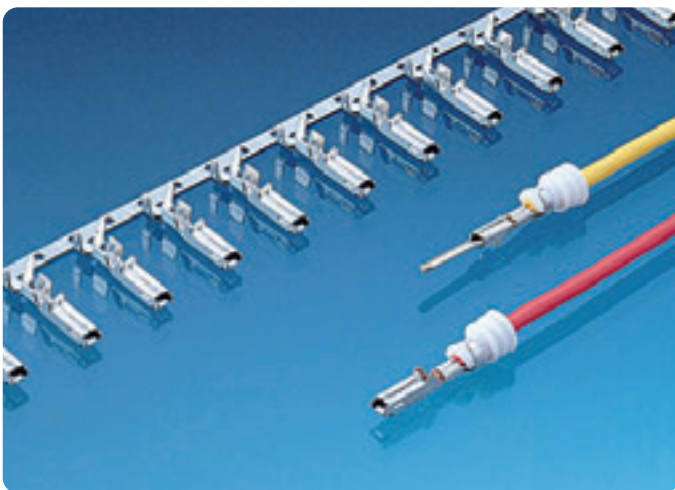
1.0, 1.5 & 1.8 mm

Features

- High current carrying capacity
- Single wire sealing compatible



MCS 1.0 mm



MCS 1.5 mm



MCS 1.8 mm

Technical characteristics

Terminal size	1.0 mm (040 in)	1.5 mm (inch 050)	1.8 mm (070 in)
Contact pitch	2.5 mm	3.5 mm	3.5 mm
Wire size range	0.35-0.5 mm ²	1-1.5 mm ²	1-1.5 mm ²
Contact resistance	< 5 mΩ	< 3 mΩ	< 3 mΩ
Contact mating force	< 4 N	< 6 N	< 6 N
Contact unmating force	< 4 N	< 3.5 N	< 3.5 N
Max. Current carrying capacity at 23 °C*	13 A	14 A	14 A

*For reference only

Main Part Numbers

	Wire size range	1.0 mm (040 in)	1.5 mm (inch 050)	1.8 mm (070 in)
Female terminals, Tin plated	0.35-0.5 mm ²	200CC1S0102	MCSFD01	MCSFDBU1
	0.75-0.85 mm ²	200CC1S1102	-	-
	1-1.5 mm ²	-	MCSFD02	MCSFDBU2
Female terminals SWS, Tin plated	0.35-0.5 mm ²	-	-	MCSFW01
	1-1.5 mm ²	-	-	MCSFW02
Male terminals, Tin plated	0.22-0.35 mm ²	200CL1S0102	MCSMD01	MCSMDBU1
	0.75-0.85 mm ²	200CL1S1102	-	-
	0.22-1 mm ²	-	MCSMD02	MCSMDBU2
Male terminals SWS, Tin plated	0.22-0.35 mm ²	-	-	MCSMW01
	0.22-1 mm ²	-	-	MCSMW02

SWS Single Wire Seal

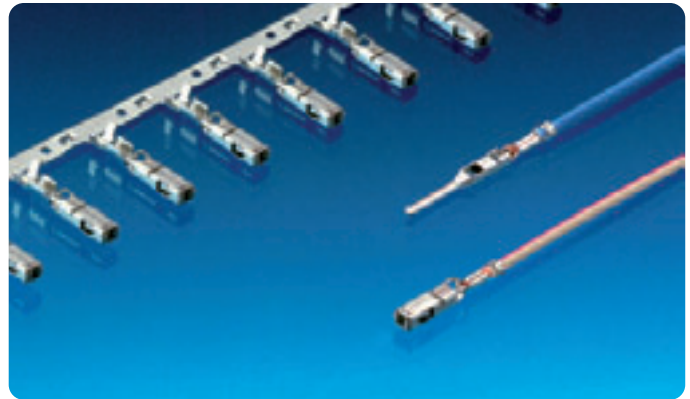
Other parts available, please consult our website



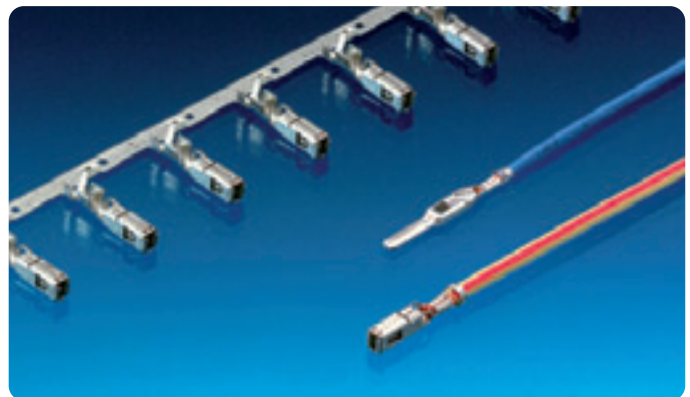
Sicma Terminals 0.64, 1.5 & 2.8 mm

Features

- Size range: 1.5 to 2.8 mm
- One-piece design
- Low contact mating force
- High current carrying capacity
- Single wire seal compatible
- Temperature range -40 to 125 °C
- Temperature range -40 to 155 °C (gold plated)
- Suitable for secondary lock
- SICMA 150 has been designed for high vibration



Sicma 1.5 mm



Sicma 2.8 mm

Technical characteristics

Terminal size	Micro Sicma	1.5 mm Sicma	1.5 mm Sicma Plus**	1.5 mm Sicma 150	2.8 mm Sicma
Pitch	2.5 mm	3.33 mm	3.33 mm	3.33 mm	5 mm
Wire size range	0.5-0.6 mm ²	0.35-2 mm ²	1-2 mm ²	0.35-2 mm ²	0.35-5 mm ²
Contact resistance	< 3 mΩ	< 2 mΩ	< 2 mΩ	< 2 mΩ	< 1.5 mΩ
Contact mating force	< 4 N	< 4 N	< 4 N	< 4 N	< 6 N
Contact unmating force	< 2.5 N	< 3 N	< 3 N	< 3 N	< 1.5 N
Max. current carrying capacity at 23 °C*	11 A	19 A	19 A	20 A	19 A/25A/35A

*For reference only

Main Part Numbers

	Wire size range	0.64 mm Micro Sicma	1.5 mm Sicma	1.5 mm Sicma Plus**	1.5 mm Sicma 150	2.8 mm Sicma
Female	0.5-0.6 mm ²	211CC1S1124	-	-	-	-
	0.35-0.75 mm ²	-	211CC2S1160	211CC2S1160P	211CC2S1190P	211CC3S1160
	0.8-1 mm ²	-	-	211CC2S4190P	211CC2S4160P	211CC3S4160
	1-2 mm ²	-	211CC2S2160	211CC2S2160P** 211CC2S2160B ***	211CC2S2190P	211CC3S2160
	3-5 mm ²	-	-	-	-	211CC3S3120
Female SWS	0.35-0.75 mm ²	-	211CC2S1161	211CC2S1161P	-	211CC3S1161
	0.8-1 mm ²	-	-	211CC2S4161P	-	-
	1-2 mm ²	-	211CC2S2161	211CC2S2161P	-	211CC3S2161
	3-5 mm ²	-	-	-	-	211CC3S3120
Male	0.5-0.6 mm ²	211CL1S1124	-	-	-	-
	0.35-0.75 mm ²	-	211CL2S1160	-	-	211CL3S1160
	1-2 mm ²	-	211CL2S2160	-	-	211CL3S2160
	3-5 mm ²	-	-	-	-	211CL3S3120
Male SWS	0.35-0.75 mm ²	-	211CL2S1161	-	-	211CL3S1161
	1-2 mm ²	-	211CL2S2161	-	-	211CL3S2161
	3-5 mm ²	-	-	-	-	211CL3S3120

SWS Single Wire Seal

**Sicma Plus is designed with a smooth surface for mat seal application

***Manufactured in Europe

****Manufactured in Brazil

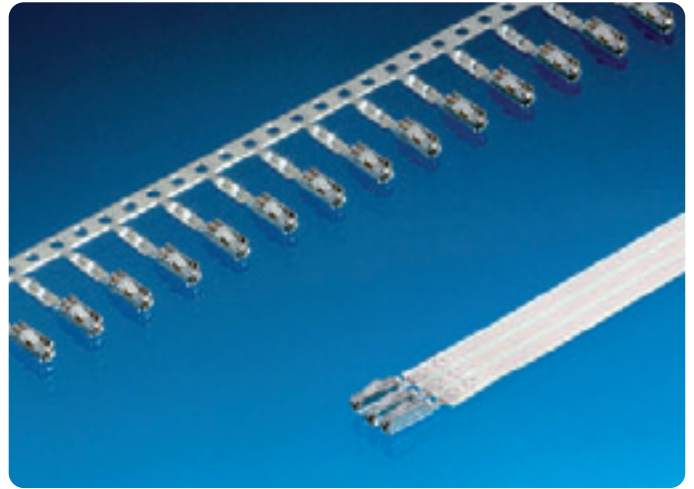
Other parts available, please consult our website



StarCrimp

Features

- Size range: 0.64 mm
- Two-piece design
- Version with metal locking lance available
- Tin plated versions available
- Temperature range -40 to 125 °C
- StarCrimp technology for Flexible Flat Cable
- Splice for flex cable
- Low contact mating force
- 4 symmetrical contact points to provide low and constant contact resistance



Duo Twin 0.64 mm StarCrimp



StarCrimp Splice

Technical characteristics

Terminal size	0.64 mm DuoTwin	StarCrimp Splice
Pitch	2.54 mm	2.54 mm
Contact resistance	< 3 mΩ	NA
Contact mating force	> 3.5 N	NA
Contact unmating force	< 3 N	NA
Maximum Current carrying capacity at 23 °C*	5 A	5 A

*For reference only

Main Part Numbers

Female terminals	60080401	55397401
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Other parts available, please consult our website



APEX® 150 sealed Connectors

10, 14, 16 & 24 ways

Features

- ▶ Number of ways: 10, 14, 16 and 24
- ▶ USCAR "on-engine" performance standard suitable for harsh environments
- ▶ Circumferential interface seal
- ▶ Mat seal design
- ▶ Wire accommodation range - 0.35 mm² (22 AWG) to 1.5 mm² (16 AWG)
- ▶ Mid-sized housings (3.5 mm pitch)
- ▶ Fully assembled connector for ease of use
- ▶ Terminal Position Assurance (TPA) device to detect partially installed terminals
- ▶ Connector Position Assurance (CPA) available
- ▶ 24 ways version includes FCI's ErgoMate® mate-assist technology
- ▶ 14 ways and 24 ways connectors offer shorting bar options



APEX® 150 Connectors



APEX® 24 ways ErgoMate

Technical characteristics

Number of ways		10 ways	14 ways	16 ways	24 ways
Terminal size	Female & male APEX® 150	10	10	16	16
	Female & male APEX® 2.8 mm		4		8
Sealing protection		IP 68	IP 68	IP 68	IP 68
Temperature range		-40°C to +125°C	-40°C to +125°C	-40°C to +125°C	-40°C to +125°C
Terminal retention force	APEX® 150	> 70 N	> 70 N	> 70 N	> 70 N
	APEX® 2.8 mm	-	> 90 N	-	> 90 N
Terminal insertion force	APEX® 150	< 30 N	< 30 N	< 30 N	< 30 N
	APEX® 2.8 mm	-	< 30 N	-	< 30 N
Connector mating force		< 75 N	< 75 N	< 75 N	< 75 N
Number of mechanical coding	Female housings	4	8	4	4
	Male housings	4	8	4	4

Main Part Numbers

Female housings	54241030	55251400	54241630	PPI0000656
Male housings	54241000	54251400	54241600	PPI0000678

54241030 stands for 10 way male **black color, key coding A**

Other color codings available, please consult our website
For terminals, please check pages 10-11



APEX® 2.8 mm sealed Connectors

Low Pin Count: 2, 3, 4, 6, 10 & 14 ways

Features

- ▶ Number of ways: 2, 3, 4, 6, 10 and 14
- ▶ Circumferential interface seal
- ▶ Heavy duty connectors for demanding environments
- ▶ Proven record since 1993
- ▶ Most compact 2.8 mm system in the industry
- ▶ Wire accommodation range - 0.75 mm² (20 AWG) to 4 mm² (10 AWG)
- ▶ Mid-sized housings (5.25 mm pitch - 6.40 mm rows)
- ▶ Mat seal design
- ▶ Fully assembled connector for ease of use
- ▶ Terminal Position Assurance (TPA) device to detect partially installed terminals
- ▶ CPA Available



APEX® 2.8 mm

Technical characteristics

Number of ways	2 ways	3 ways	4 ways	6 ways	10 ways	14 ways
Sealing protection	IP 68	IP 68	IP 68	IP 68	IP 68	IP 68
Temperature range	-40°C to +150°C	-40°C to +150°C	-40°C to +125°C	-40°C to +125°C	-40°C to +125°C	-40°C to +125°C
Terminal retention force	> 90 N	> 90 N	> 90 N	> 90 N	> 90 N	> 90 N
Terminal insertion force	< 30 N	< 30 N	< 30 N	< 30 N	< 30 N	< 30 N
Connector mating force	< 75 N	< 75 N	< 75 N	< 90 N	< 120 N	< 142 N
Number of mechanical coding	Female housings	4	4	4	4	7
	Male housings	4	4	4	4	4

Main Part Numbers

Female housings	54200206	54200308	54200409	54200608	54201009	54201411
Male housings	54200210	54200312	54200413	54200612	54201016	54201415

54200206 stands for 2 ways female **black color coding, key coding A**

Other color codings available, please consult our website
For terminals, please check pages 10-11



DCS Power sealed Connectors

Low Pin Count: 2, 3 & 4 ways

Features

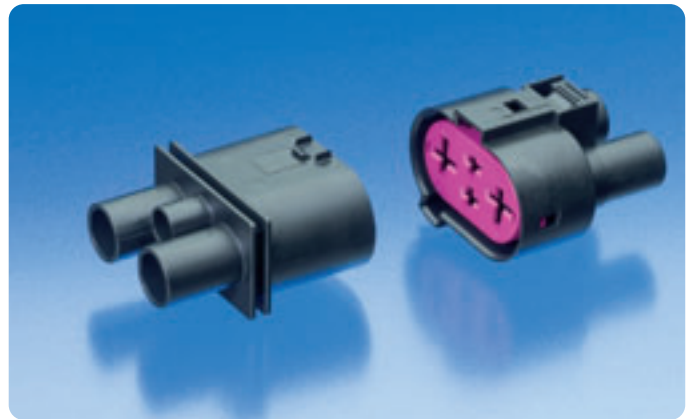
- ▶ Number of ways: 2, 3, 4
- ▶ Radial sealing and single wire sealing
- ▶ Mechanical coding
- ▶ Connector position assurance (CPA - 2 ways)
- ▶ Terminal position assurance (TPA)
- ▶ User friendly with integrated secondary lock device allowing for detection of unseated terminals
- ▶ Easy and quick connection system with terminal guiding system



DCS Power 2 ways



Power 3 ways



DCS Power 4 ways

Technical characteristics

Number of ways		2 ways	3 ways	4 ways
Sealing protection		IP 67	IP 67	IP 67
Terminals	Female DCS-1 Box 4.8 mm**	-	-	2**
	Female 4.8 mm*	-	3	-
	Female DCS-1 Box 9.5 mm	2	-	2
	Male DCS-1 9.5 mm	2	-	2
	Male 4.8 mm*	-	3	-
	Male 5.8 mm*	-	-	2**
Temperature range		-40°C to +120°C	-40°C to +120°C	-40°C to +120°C
Terminal retention force	DCS 4.8 mm	-	-	> 120 N
	DCS 9.5 mm	> 160 N	-	> 160 N
Terminal insertion force	DCS 4.8 mm	-	-	< 20 N
	DCS 9.5 mm	< 30 N	-	< 30 N
Connector mating force		< 75 N	< 150 N	< 150 N
Number of mechanical coding(s)		1	1	1

*Consult us

**4.8 mm DCS Box Female terminal mates with 5.8 mm male terminal

Part Numbers

Female housings	F064200	F563200	F004200
Male housings	F264200	F763200	F353200

For terminals, please check pages 12-13



DCS sealed Connectors Low Pin Count: 7, 8 & 11 ways

Features

- ▶ Number of ways: 7, 8, 11
- ▶ Radial sealing and single wire sealing
- ▶ Mechanical coding
- ▶ Connector position assurance (CPA)
- ▶ Terminal position assurance (TPA)
- ▶ Lever for connector mating force reduction (11 ways) and connector position assurance
- ▶ Cable protection cover (11 ways)



DCS 7 ways



DCS 8 ways



DCS 11 ways

Technical characteristics

Number of ways		7 ways	8 ways	11 ways
Sealing protection		IP67	IP67	IP67
Terminals	Female & male DCS-2 1.5 mm	7	-	9
	Female & male DCS-2 2.8 mm	-	8	-
	Female DCS-1 Box 4.8 mm**	-	-	2**
	Male 4.8 mm*	-	-	2**
Temperature range		-40°C to +120°C	-40°C to +120°C	-40°C to +120°C
Terminal retention force	DCS 1.5 mm	> 70 N		> 70 N
	DCS 2.8 mm	-	> 90 N	-
	DCS Box 4.8 mm	-	-	> 120 N
Terminal insertion force	DCS 1.5 mm	< 10 N	-	< 10 N
	DCS 2.8 mm	-	< 15 N	-
	DCS 4.8 mm	-	-	< 20 N
Connector mating force		< 75 N	< 150 N	< 80 N

*Consult us

**Female DCS Box 4.8 mm mates with male 4.8 mm terminals

Main Part Numbers

Female housings	F308100	60411221***	30431601***
Male housings	F408100	60510401***	30530501***
Cover	-	-	30991201***

***This part number has a customer logo, please consult us for neutral version

For terminals, please check page 12



DCS sealed circular Connectors 10 & 34 ways

Features

- ▶ Number of ways: 10, 34
- ▶ Radial sealing and single wire sealing
- ▶ Mechanical coding
- ▶ Terminal position assurance (TPA)
- ▶ Connector position assurance (CPA - 34 ways)



DCS 10 ways



DCS 34 ways

Technical characteristics

Number of ways		10 ways	34 ways
Sealing protection		IP67	IP67
Terminals	Female & male DCS-2 1.5 mm	-	30
	Female & male DCS-1 2.8 mm	10	-
	Female & male DCS-2 2.8 mm	-	4
Temperature range		-40°C to +120°C	-40°C to +120°C
Terminal retention force	DCS 1.5 mm	-	< 70 N
	DCS 2.8 mm	< 90 N	< 90 N
Terminal insertion force	DCS 1.5 mm	-	> 10 N
	DCS 2.8 mm	> 15 N	> 15 N
Connector mating force		< 100 N	< 150 N

Main Part Numbers

Female housings	60422401	30430201*
Male housings	43220701	30530101*

*This part number has a customer logo, please consult us for neutral version

For terminals, please check page 12



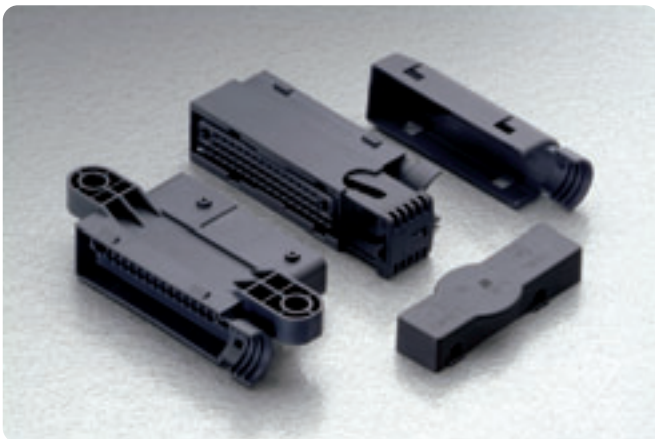
DCS sealed Connectors High Pin Count: 34, 48 & 56 ways

Features

- ▶ Number of ways: 34, 48, 56
- ▶ Radial (34 ways) and axial (48- and 56 ways) sealing and single wire sealing
- ▶ Mechanical coding
- ▶ Terminal position assurance (TPA)
- ▶ Slider for connector mating force reduction and connector position assurance
- ▶ Cable protection cover (48- and 56 ways)



DCS 34 ways



DCS 48 ways



DCS 56 ways

Technical characteristics

Number of ways		34 ways	48 ways	56 ways
Sealing protection		IP67	IP67	IPx9 K
Terminals	Female & male DCS-2 1.5 mm	32	46	56
	Female & male DCS-2 2.8 mm	2	-	-
	Female & male 5.8 mm*	-	2	-
Temperature range		-40°C to +100°C	-40°C to +120°C	-40°C to +120°C
Terminal retention force	DCS 1.5 mm	> 70 N	> 70 N	> 70 N
	DCS 2.8 mm	> 90 N	-	-
Terminal insertion force	DCS 1.5 mm	< 10 N	< 10 N	< 10 N
	DCS 2.8 mm	< 15 N	-	-
Connector mating force		< 75 N	< 200 N	< 200 N

*Consult us

Main Part Numbers

Female housings	30432411**	60432101**	60440201**
Cover	-	60994601**	60994801**
Male housings	30530611**	60530501**	60540201**
Cover	-	60994601**	60994701**

**This part number has a customer logo, please consult us for neutral version

For terminals, please check page 12



Sicma Sealed Connectors

Mini-Sealed 2, 3, 4, 5 and 6 ways & 24 ways

Features

- ▶ Number of ways: 2, 3, 4, 5, 6, 24
- ▶ High sealing performance ensured by rear mat-seal and circumferential interface seal
- ▶ Optimized size with 3.33 mm pitch for 1.5 mm terminals
- ▶ Reduced size sealed housing
- ▶ Easy and quick connection system with Go-No-Go locking principle
- ▶ Integrated secondary lock feature (TPA) allowing detection of unlocked terminals
- ▶ Terminal Position Assurance (TPA)
- ▶ Optional Connector Position Assurance for 2 and 6 ways (CPA)
- ▶ Optional 6 ways hybrid with rear latch principle: 17260685A (black coding)
- ▶ Suitable for body, engine compartment and harsh environment applications



Sicma Mini Sealed

Technical characteristics

Number of ways		2 ways	3 ways	4 ways	5 ways
Sealing protection		IP 58 & IPx9K	IP 58 & IPx9K	IP 58 & IPx9K	IP 58 & IPx9K
Terminals	Female & male Sicma 1.5 mm	2	3	4	5
Temperature range		-40°C to +125°C	-40°C to +125°C	-40°C to +125°C	-40°C to +125°C
Terminal retention force		> 100 N	> 100 N	> 100 N	> 100 N
Terminal insertion force		< 15 N	< 15 N	< 15 N	< 15 N
Connector mating force		< 80 N	< 80 N	< 80 N	< 80 N
Number of mechanical coding	Female housings	9	8	3	3
	Male housings	7	6	3	3

SWS Single Wire Seal

Main Part Numbers

Female housings	211PC022S0149	211PC032S0149	211PC042S4021	211PC052S0081
Male housings	211PL022S0049	211PL032S0049	211PL042S0011	211PL052S0049

Technical characteristics

Number of ways		5 ways SWS	6 ways	6 ways hybrid	24 ways
Sealing protection		IP 58 & IPx9K	IP 58 & IPx9K	IP 58 & IPx9K	IP 58 & IPx9K
Terminals	Female & male Sicma 1.5 mm	-	6	4	18
	Female & male Sicma 2.8 mm	5	-	2	6
Temperature range		-40°C to +125°C	-40°C to +125°C	-40°C to +125°C	-40°C to +125°C
Terminal retention force		> 100 N	> 100 N	> 100 N	> 100 N
Terminal insertion force		< 15 N	< 15 N	< 15 N	< 15 N
Connector mating force		< 80 N	< 80 N	< 80 N	< 80 N
Number of mechanical coding	Female housings	2	3	3	4
	Male housings	-	3	3	4

SWS Single Wire Seal

Main Part Numbers

Female housings	211PC053S4026	211PC062S5149	211PC069S0149	211PC249S0033
Male housings	-	211PL062S5049	211PL069S0049	211PL249S0033

211PC022S0149 stands for 2 ways female **black color coding**

Other color codings available, please check our website
For terminals, please check page 21

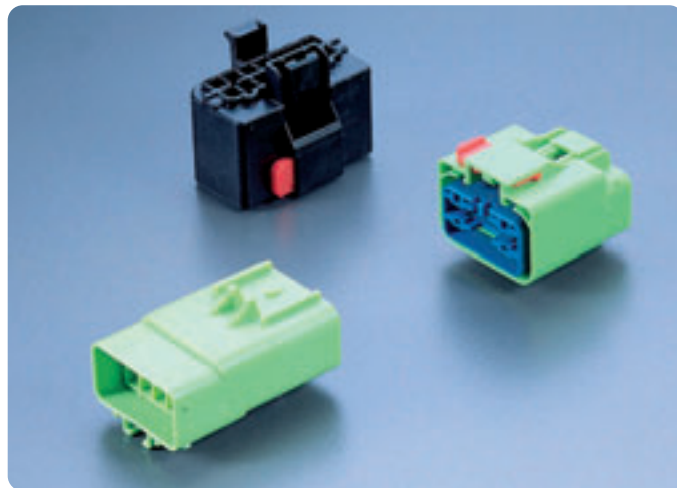


APEX® 2.8 mm unsealed Connectors

Low Pin Count: 2, 3, 4, 6, 10 & 14 ways

Features

- ▶ Robust APEX® performance
- ▶ Meets or exceeds USCAR performance standards
- ▶ Wire accommodation range - 0.35 mm² (22 AWG) to 5 mm² (10 AWG)
- ▶ Mid-sized housings (5.25 mm pitch - 6.40 mm rows)
- ▶ Fully assembled connector for ease of use
- ▶ Terminal Position Assurance (TPA) device to detect partially installed terminals
- ▶ Connector Position Assurance (CPA) available
- ▶ Up to 7 mechanical polarizations available



APEX® 2.8 mm unsealed

Technical characteristics

Number of ways	2 ways	3 ways	4 ways	6 ways	10 ways	14 ways
Temperature range	-40°C to +125°C	-40°C to +125°C	-40°C to +125°C	-40°C to +125°C	-40°C to +125°C	-40°C to +125°C
Terminal retention force	> 90 N	> 90 N	> 90 N	> 90 N	> 90 N	> 90 N
Terminal insertion force	< 15 N	< 15 N	< 15 N	< 15 N	< 15 N	< 15 N
Connector mating force	< 90 N	< 90 N	< 90 N	< 90 N	< 90 N	< 90 N

Main Part Numbers

Female housings	54200200	54200300	54200400	54200600	54201000	54201400
Male housings	54200204	54200304	54200405	54200604	54201006	54201404

54200200 stands for 2 ways female black color coding

Other color codings available, please check our website
For terminals, please check pages 10-11

DCK-DCS unsealed Connectors

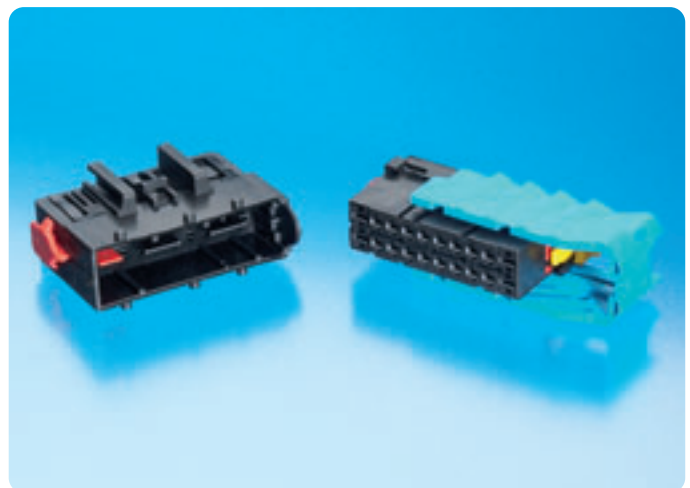
12, 20 ways

Features

- ▶ Number of ways: 12, 20
- ▶ Mechanical coding
- ▶ Terminal position assurance (TPA)
- ▶ Slider for connector mating force reduction and Connector Position Assurance (CPA)



DCK 12 ways



DCK 20 ways

Technical characteristics

Number of ways		12 ways	20 ways
Terminals	Female DCK 1.5 mm	8	16
	Female DCK 2.8 mm	4	4
	Male DCS-2 1.5 mm	8	16
	Male DCS-2 2.8 mm	4	4
Temperature range		-40°C to +125°C	-40°C to +125°C
Terminal retention force	DCK 1.5 mm	> 70 N	> 70 N
	DCK 2.8 mm	> 90 N	> 90 N
Terminal insertion force	DCK 1.5 mm	< 10 N	< 10 N
	DCK 2.8 mm	< 15 N	< 15 N
Connector mating force		< 75 N	< 75 N

*Consult us

Main Part Numbers

Female housings	17301200	17302000
Male housings	17211201	17212001

For terminals, please check pages 12 & 14

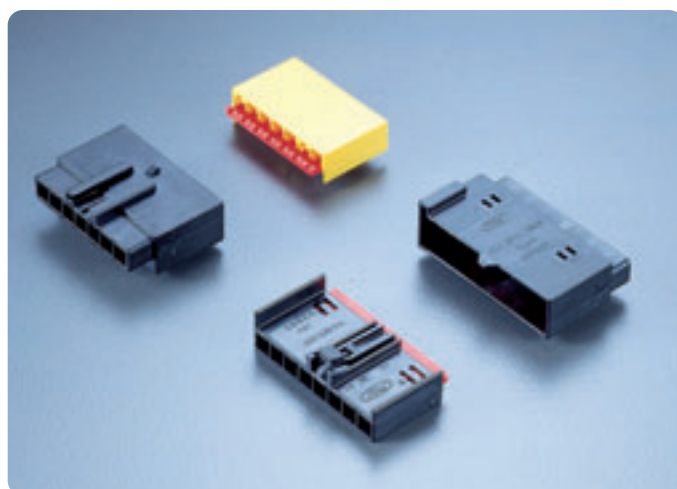


DCS unsealed Connectors

7 & 8 ways

Features

- ▶ Number of ways: 7, 8
- ▶ Mechanical coding
- ▶ Terminal position assurance (TPA)
- ▶ Slider for connector mating force reduction and connector position assurance (31 ways)
- ▶ Modular construction (15 ways + 16 ways available (31 ways)



DCS unsealed 7 & 8 ways

Technical characteristics

Number of ways		7 ways	8 ways
Terminals	Female & male DCS-1 1.5 mm	7	8
Temperature range		-40°C to +105°C	-40°C to +105°C
Terminal retention force	DCS 1.5 mm	> 90 N	> 90 N
Terminal insertion force	DCS 1.5 mm	< 15 N	< 15 N
Connector mating force		< 90 N	< 90 N

Part Numbers

Female housings	30200801*	30200901*
Male housings	30300601*	30300701*

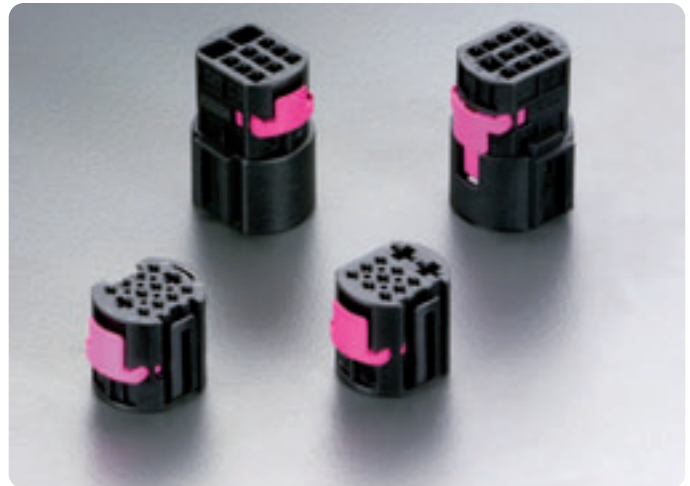
*This part number has a customer logo, please consult us for neutral version

For terminals, please check page 12

DCS unsealed Connectors 11, 12, 14 & 31 ways

Features

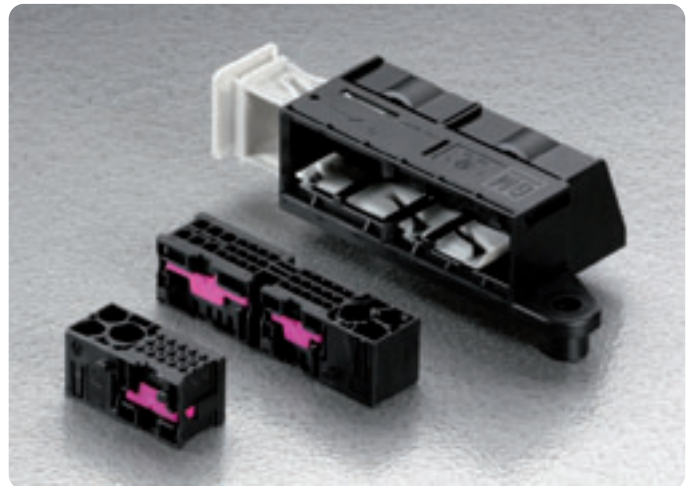
- ▶ Number of ways: 11, 12, 14, 31
- ▶ Mechanical coding
- ▶ Terminal position assurance (TPA)
- ▶ Slider for connector mating force reduction and connector position assurance (31 ways)
- ▶ Modular construction (15 ways + 16 ways) available (31 ways)



DCS unsealed 11 & 12 ways



DCS unsealed 14 ways



DCS unsealed 31 ways

Technical characteristics

Number of ways		11 ways	12 ways	14 ways	31 (+2) ways
Terminals	Female & male DCS-2 1.5 mm	9	10	12	25
	Female & male DCS-2 2.8 mm	-	2	-	6
	Female & male 4.8 mm*	2	-	2	-
	Micro Coax*	-	-	-	2
Temperature range		-40°C to +105°C	-40°C to +105°C	-40°C to +105°C	-40°C to +105°C
Terminal retention force	DCS 1.5 mm	> 70 N	> 70 N	> 70 N	> 70 N
	DCS 2.8 mm	-	> 90 N	-	> 90 N
Terminal insertion force	DCS 1.5 mm	< 10 N	< 10 N	< 10 N	< 10 N
	DCS 2.8 mm	-	< 15 N	-	< 15 N
Connector mating force		< 100 N	< 100 N	< 120 N	< 120 N

*Consult us

Part Numbers

Female housings	30234001**	60231301**	F493200	60231500**
Male housings	30331101**	60330001**	F693200	60330300**

**This part number has a customer logo, please consult us for neutral version

For terminals, please check page 12

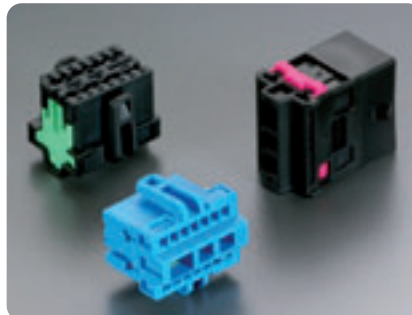


DuoTwin/DCK unsealed Connectors

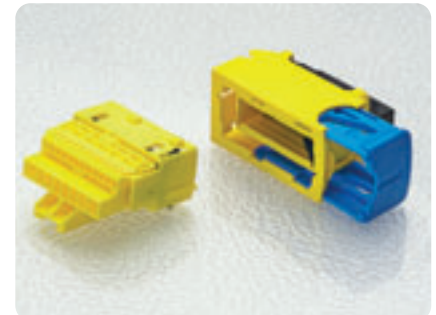
17, 20, 22, 24 & 46 ways

Features

- ▶ Number of ways: 17, 20, 22, 24, 46
- ▶ Mechanical coding
- ▶ Terminal position assurance (TPA)
- ▶ Slider for connector mating force reduction and connector position assurance (20 ways)
- ▶ Lever for connector mating force reduction and connector position assurance (22, 24- and 46 ways)



DuoTwin 17 ways



DuoTwin 20 ways



DuoTwin 24 ways



DuoTwin 46 ways

Technical characteristics

Number of ways		17 ways	20 ways	22 ways	24 ways	46 ways
Terminals	Female DuoTwin/ DCK0.64 mm*	14*	12*	20*	16*	46*
	Female & Male DCS-2 1.5 mm	2	-	-	-	-
	Female & Male DCS-2 2.8 mm	1	-	2	8	-
	Female & Male Sicma 1.5 mm	-	6	-	-	-
	Female & Male Sicma 2.8 mm	-	2	-	-	-
	Male DuoTwin 0.64 mm*	14*	12*	20*	16*	46*
Temperature range		-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C
Terminal retention force	DCK0.64 mm	> 60 N	> 60 N	> 60 N	> 60 N	> 60 N
	DCS 1.5 mm	> 70 N	-	-	-	-
	DCS 2.8 mm	> 90 N	-	> 90 N	> 90 N	-
	DuoTwin 0.64 mm	> 60 N	> 60 N	> 60 N	> 60 N	> 60 N
	Sicma 1.5 mm	-	> 50 N	-	-	-
	Sicma 2.8 mm	-	> 90 N	-	-	-
Terminal insertion force	DCK0.64 mm	< 5 N	< 5 N	< 5 N	< 5 N	< 5 N
	DCS 1.5 mm	< 10 N	-	-	-	-
	DCS 2.8 mm	< 15 N	-	< 15N	< 15N	-
	DuoTwin 0.64 mm	< 5 N	< 5 N	< 5 N	< 5 N	< 5 N
	Sicma 1.5 mm	-	< 10 N	-	-	-
	Sicma 2.8 mm	-	< 15 N	-	-	-
Connector mating force		< 100 N	< 60 N	≤ 75N	≤ 75N	< 100 N

*DCK0.64 female terminals mate with DuoTwin male terminals

Main Part Numbers

Female housings	30232801**	211PC209S4055	250PC229S0001	17212400	30211711
Male housings	30330801**	211PL209S4055	250PL229S0001	17212401	30310711

**This part number has a customer logo, please consult us for neutral version

Other color codings available, please check our website
For terminals, please check pages 12, 14, 15 & 21



GTS unsealed Connectors

32 & 48 ways

Features

- ▶ Numbers of ways: 32, 48
- ▶ High density connector with integrated mating device
- ▶ Protecting grid for 0.64 male terminal
- ▶ Front secondary lock for TPA
- ▶ Application with pre-mounted rotating locking lever
- ▶ Polarization to avoid reverse terminals:
GTS-3 0.64 & 1.5, DCK & DCS-2 2.8 mm



32 ways



48 ways

Technical characteristics

Number of ways		32 ways	48 ways
Terminals	Female & male GTS-3 0.64 mm	20	32
	Female & male GTS-3 1.5 mm	10	12
	Female DCK 2.8 mm	2	4
	Male DCS-2 2.8 mm	2	4
Temperature range		-40°C to +80°C	-40°C to +80°C
Terminal retention force	GTS-3 0.64 mm	> 60 N	> 60 N
	GTS-3 1.5 mm	> 80 N	> 80 N
	DCS-2 2.8 mm	> 100 N	> 100 N
Terminal insertion force	GTS-3 0.64 mm	< 15 N	< 15 N
	GTS-3 1.5 mm	< 15 N	< 15 N
	DCS-2 2.8 mm	< 15 N	< 15 N
Connector mating force		< 75 N	< 90 N

Main Part Numbers

Female housings	90258000	90260400
Male housings	90258100	90260500

Other color codings available, please check our website
For terminals, please check pages 12, 14 & 17



Hylok unsealed Connectors

2, 3, 4, 6, 9, 12 and 15 ways

Features

- ▶ Number of ways: 2, 3, 4, 6, 9, 12 and 15 ways
- ▶ Mechanical polarization
- ▶ Positive-locking housings so the connectors cannot be accidentally disconnected in free-hanging or panel-mount applications
- ▶ UL 94 V0 approved



Hylok 2 ways



Hylok 4 ways



Hylok 9 ways



Hylok 15 ways

Technical characteristics

Number of ways	2 ways	3 ways	4 ways	6 ways
Temperature range	-55°C to+105°C	-55°C to+105°C	-55°C to+105°C	-55°C to+105°C
Terminal retention force	> 70 N	> 70 N	> 70 N	> 70 N
Terminal insertion force	< 8 N	< 8 N	< 8 N	< 8 N
Connector mating force	< 30 N	< 40 N	< 50 N	< 70 N

Main Part Numbers

Female housings	UHR2000BRZ	UHR3000BRZ	UHR4000BRZ	UHR6000BRZ
Male housings	UHP2000BRZ	UHP3000BRZ	UHP4000BRZ	UHP6000BRZ

Technical characteristics

Number of ways	9 ways	12 ways	15 ways
Temperature range	-55°C to+105°C	-55°C to+105°C	-55°C to+105°C
Terminal retention force	> 70 N	> 70 N	> 70 N
Terminal insertion force	< 8 N	< 8 N	< 8 N
Connector mating force	< 105 N	< 140 N	< 180 N

Main Part Numbers

Female housings	UHR9000BRZ	UHR12000BRZ	UHR15000BRZ
Male housings	UHP9000BRZ	UHP12000BRZ	UHP15000BRZ

Other color codings available, please check our website
For terminals, please check page 19

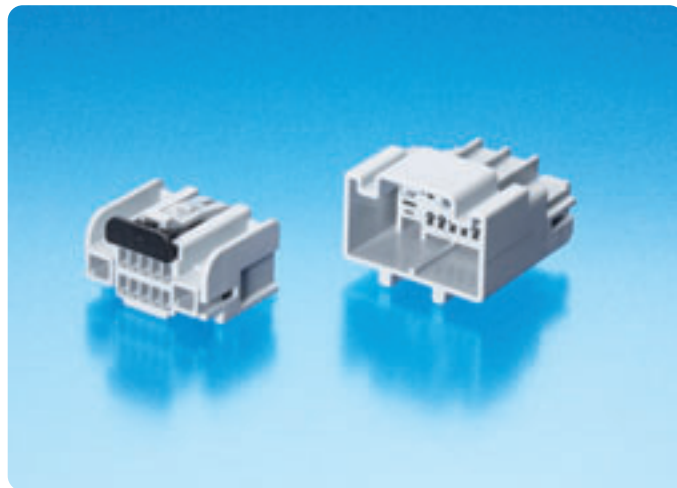


MCS 1.0 mm (040 in) unsealed Connectors

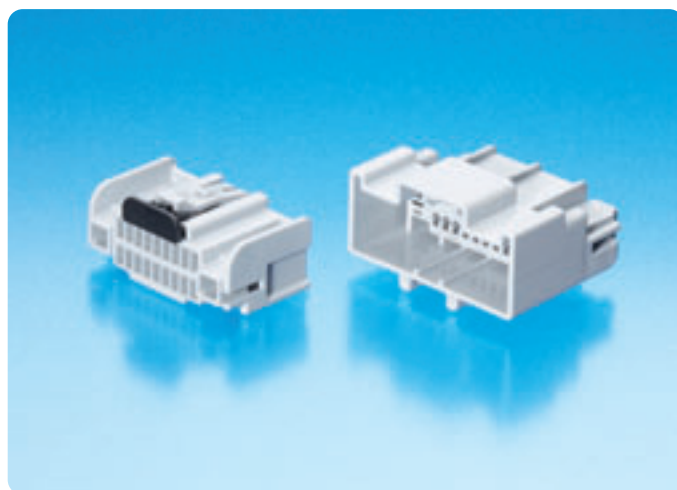
12 & 20 ways

Features

- ▶ Number of ways: 12, 20
- ▶ Mechanical polarization
- ▶ Go-No-Go housing locking principle
- ▶ Plastic locking feature
- ▶ Male housing prepared for fixing clip
- ▶ Several color and mechanical codings available
- ▶ Connector position assurance (CPA)
- ▶ Terminal position assurance (TPA)
- ▶ TPA & CPA in prefixed position



MCS 1.0 mm 12 ways



MCS 1.0 mm 20 ways

Technical characteristics

Number of ways		12 ways	20 ways
Terminals	Female & male MCS 1 mm (040)	10	18
	Female DCK 2.8 mm	2	2
	Male DCS 2.8 mm	2	2
Temperature range		-40°C to +80°C	-40°C to +80°C
Terminal retention force	MCS 1 mm (040)	> 80 N	> 80 N
	DCK 2.8 mm	> 100 N	> 100 N
Terminal insertion force	MCS 040	< 15 N	< 15 N
	DCK 2.8 mm	< 30 N	< 30 N
Connector mating force		< 75 N	< 135 N

Main Part Numbers

Female housings	90288300	90288100
Male housings	90288400	90288200

For terminals, please check page 20

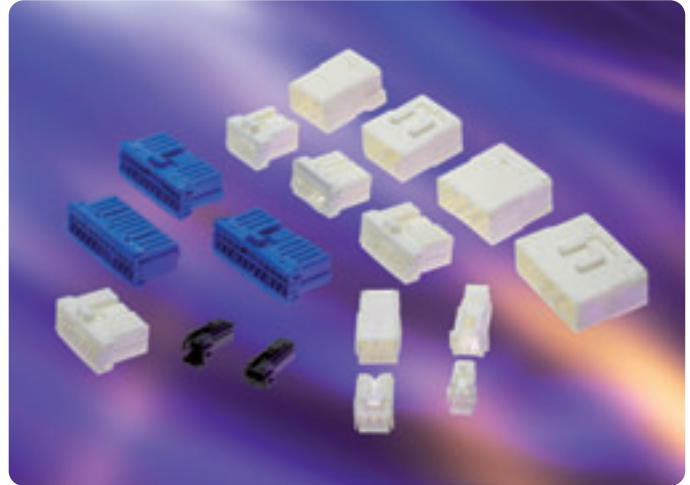


MCS 1.8 mm unsealed Connectors

1 to 4, 6, 8, 10, 14, 18 & 20 ways

Features

- ▶ Housings suitable for wires from 0.35 mm² up-to 1.5 mm² and carrying up-to 14 A at 23 °C
- ▶ Cost effective solution for unsealed applications
- ▶ User friendly with integrated secondary lock device allowing for detection of unsealed terminals (TPA)
- ▶ Easy and quick connection system with latching lock principle



MCS housings

Technical characteristics

Number of ways	1 way	2 ways	3 ways	4 ways	6 ways	8 ways
Temperature range	-30°C to +105°C	-30°C to +105°C	-30°C to +105°C	-30°C to +105°C	-30°C to +105°C	-30°C to +105°C
Terminal retention force	> 80 N	> 80 N	> 80 N	> 80 N	> 80 N	> 80 N
Terminal insertion force	< 10 N	< 10 N	< 10 N	< 10 N	< 10 N	< 10 N
Connector mating force	< 35 N	< 35 N	< 35 N	< 35 N	< 65 N	< 65 N
Number of mechanical coding	Female housings	1	3	2	1	3
	Male housings	1	2	2	0	2

Main Part Numbers

Female housings	MCHFHPE01BK	MCHFHPE02WH	MCHFHPE03WH	MCHFHPE04WH	MCHFHPE06WH	MCHFHPE08WH
Male housings	MCHMHPE01BK	MCHMHPE02WH	MCHMHPE03WH	-	MCHMHPE06WH	MCHMHPE08WH

Technical characteristics

Number of ways with MCS 1.8 mm terminals	10 ways	12 ways	14 ways	18 ways	20 ways
Temperature range	-30°C to +105°C	-30°C to +105°C	-30°C to +105°C	-30°C to +105°C	-30°C to +105°C
Terminal retention force	> 80 N	> 80 N	> 80 N	> 80 N	> 80 N
Terminal insertion force	< 10 N	< 10 N	< 10 N	< 10 N	< 10 N
Connector mating force	< 120 N	< 120 N	< 120 N	< 120 N	< 120 N
Number of mechanical coding	Female housings	1	4	1	2
	Male housings	1	3	1	2

Main Part Numbers

Female housings	MCHFHPE10WH	MCHFHPE12WH	MCHFHPE14WH	MCHFHPE18WH	MCHFHPE20WH
Male housings	MCHMHPE10WH	MCHMHPE12WH	MCHMHPE14WH	MCHMHPE18WH	MCHMHPE20WH

Example: MCHFHBE02WH stands for **2 ways female white color coding**

Other color codings available, please check our website
For terminals, please check page 20



SICMA unsealed Connectors

2, 6, 24 & 36 ways

Features

- ▶ Number of ways: 2, 6, 24 and 36
- ▶ Inline harness sectioning connectors
- ▶ Sliding lever for mating force reduction (24 and 36 ways)
- ▶ Small form fit factor in order to fit in small spaces (2 ways)
- ▶ Compatible with 5 mm² wire gauge for Sicma 2.8 mm (24 and 26 ways)
- ▶ Terminal Position Assurance (TPA) for 24 and 26 ways
- ▶ Secondary lock (2 and 6 ways)



Sicma 2 ways



Sicma 6 ways



Sicma 24 ways



Sicma 36 ways

Technical characteristics

Number of ways		2 ways	6 ways	24 ways	36 ways
Terminals	Female & male Sicma 1.5 mm	2	6	18	30
	Female & male Sicma 2.8 mm	-	-	6	6
Temperature range		-40°C to +125°C	-40°C to +125°C	-40°C to +85°C	-40°C to +85°C
Terminal retention force	Sicma 1.5 mm	> 100 N	> 65N	> 60 N	> 100 N
	Sicma 2.8 mm	-	-	> 60 N	> 120 N
Terminal insertion force	Sicma 1.5 mm	< 5 N	< 5N	< 10 N	< 8 N
	Sicma 2.8 mm	-	-	< 15 N	< 8 N
Connector mating force		< 30 N	< 60 N	< 60 N	< 60 N

Main Part Numbers

Female housings	211PC022S0010	211PC062S0017	211PC249S0020	PPI0000108
Male housings	211PL022S0048	210PL062S0003	211PL249S0020	PPI0000104

For terminals, please check page 21



DCS Panel Through Sealed Connectors

13, 22, 24 & 34 ways

Features

- ▶ Number of ways: 13, 22, 24, 34
- ▶ Radial sealing and single wire sealing
- ▶ Mechanical coding
- ▶ Terminal position assurance (TPA)
- ▶ Slider for connector mating force reduction and Connector Position Assurance (CPA)
- ▶ Male connector position assurance



DCS Panel Through Connectors

Technical characteristics

Number of ways		13 ways	22 ways	24/21 ways	34 ways
Sealing protection		IP67	IP67	IP67	IP67
Terminals	Female DCS-2 1.5 mm	9	18	22	32
	Female DCS-2 2.8 mm	-	-	2	2
	Female HPCS 2.8 mm	4	4	-	-
	Male DCS-2 1.5 mm	9	18	19	32
	Male DCS-2 2.8 mm	4	4	2	2
Temperature range		-40°C to +105°C	-40°C to +105°C	-40°C to +105°C	-40°C to +105°C
Terminal retention force	DCS 1.5 mm	> 70 N	> 70 N	> 70 N	> 70 N
	DCS 2.8 mm	-	-	> 90 N	> 90 N
	HPCS 2.8 mm	> 90 N	> 90 N		
Terminal insertion force	DCS 1.5 mm	< 10 N	< 10 N	< 10 N	< 10 N
	DCS 2.8 mm	< 15 N	< 15 N	< 15 N	< 15 N
	HPCS 2.8 mm	< 15 N	< 15 N	-	-
Connector mating force		< 100 N	< 100 N	< 100 N	< 100 N

Main Part Numbers

Female housings	30430311*	30430301*	30432421*	30432411*
Male housings	30530211*	30530201*	30530621*	30530611*

*This part number has a customer logo, please consult us for neutral version

For terminals, please check page 12



Sicma Panel Through sealed Connectors

14, 16, 24, 26, 34 & 50 ways

Features

- High density connectors particularly suitable for door to body or engine to cockpit applications
- Suitable for a combination of low and medium current applications
- Mating assistance system with slider to minimize mating force and allowing blind mating
- Male terminals can be protected from hazardous damage thanks to a front grid protection



Sicma 14, 16 & 34 ways



Sicma 24 ways



Sicma 26 ways



Sicma 50 ways

Technical characteristics

Number of ways	14 ways	16 ways	24 ways	26/29 ways female side sealed*	34 ways	50 ways
Sealing protection	IP 67	IP 67	IP 68	IP 68**	IP 67	IP 64
Terminals	Female & male Sicma 0.64 mm	-	-	18	-	-
	Female & male Sicma 1.5 mm	10	16	4	30	50
	Female & male Sicma 2.8 mm	4	-	6	4	-
Temperature range	-40°C to +125°C	-40°C to +125°C	-40°C to +125°C	-40°C to +100°C	-40°C to +125°C	-40°C to +125°C
Terminal retention force	Sicma 0.64 mm	-	-	> 70 N	-	-
	Sicma 1.5 mm	> 60 N	> 60 N	> 60 N	> 60 N	> 80 N
	Sicma 2.8 mm	> 75 N	> 75 N	> 75 N	> 120 N	> 75 N
Terminal insertion force	Sicma 0.64 mm	-	-	< 5 N	-	-
	Sicma 1.5 mm	< 12 N	< 12 N	< 12 N	< 5 N	< 12 N
	Sicma 2.8 mm	< 17 N	< 17 N	< 17 N	< 7 N	< 17 N
Connector mating force	< 70 N	< 60 N	< 60 N	< 60 N	< 60 N	< 90 N

*26 ways female sealed housing mates with 29 way male unsealed housing (3 ways are neutralised)

**With grommet hose or bellow at the back of the female housing, otherwise IP58

Main Part Numbers

Female housings	DTBFHPE14BKSV	SICFHPE16BKSV	211PC249S0033	211PC269S0046	211PC349S0033	DTB50GMFH
Male housings	DTBMHPE14BKSV	SICMHPE16BKSV	HCCMHPE24BKAFSV	211PL299S0042	211PL349S0033*	DTB50GMMH

For terminals, please check page 21

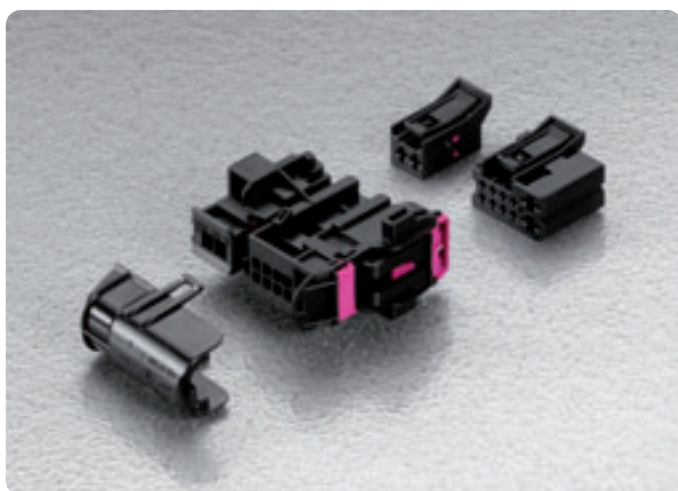


DCS Panel Through Unsealed Connectors

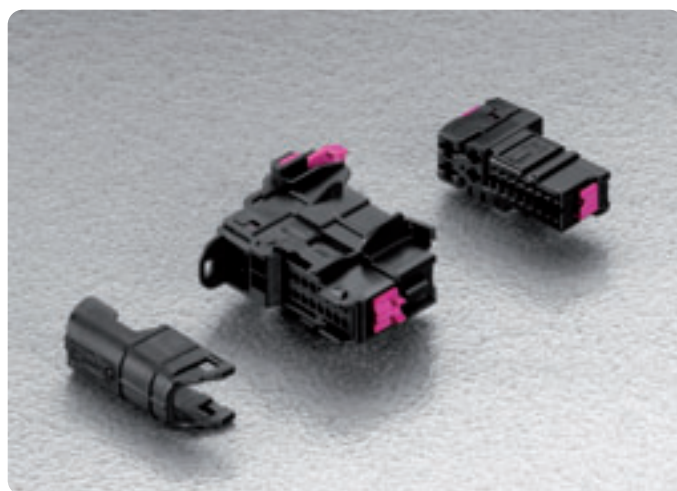
12 & 20 ways

Features

- ▶ Number of ways: 12, 20
- ▶ Mechanical coding
- ▶ Terminal position assurance (TPA)
- ▶ Cable protection cover
- ▶ Male Connector Position Assurance (CPA)



12 ways



20 ways

Technical characteristics

Number of ways		12 (10+2) ways	20 ways
Terminals	Female & Male DuoTwin 0.64	-	16
	Female & Male DCS-2 1.5 mm	8	-
	Female & Male DCS-2 2.8 mm	2	2
	Female & Male 4.8 mm*	2	2
Temperature range		-40°C to +105°C	-40°C to +105°C
Terminal retention force	DuoTwin 0.64		> 60 N
	DCS 1.5 mm	> 70 N	-
	DCS 2.8 mm	> 90 N	> 90 N
Terminal insertion force	DuoTwin 0.64		< 5 N
	DCS 1.5 mm	< 10 N	-
	DCS 2.8 mm	< 15 N	< 15 N
Connector mating force		< 100 N	< 150 N

*Consult us

Main Part Numbers

Female housings	30211301 (10 ways)** 30202901 (2 ways)**	30232901**
Male housings	30310601 (10 ways)** 30301601 (2 ways)**	30330901**
Cover	39004901**(male connector)	39005201**(male connector)

**This part number has a customer logo, please consult us for neutral version

For terminals, please check pages 12 & 15



Sicma Panel Through unsealed Connectors

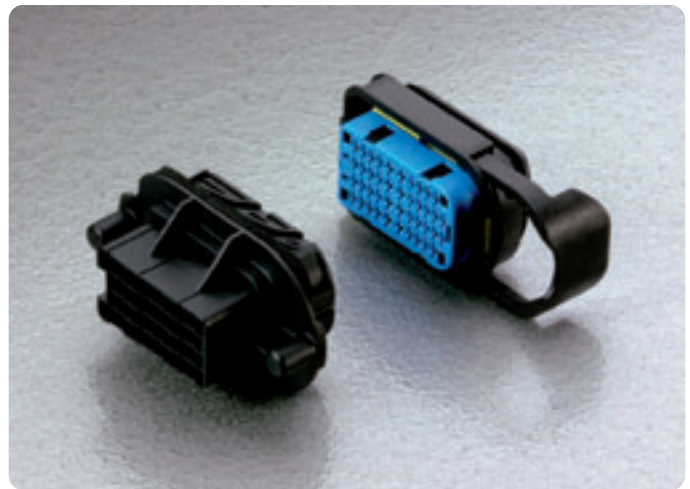
24, 29 & 42 ways

Features

- ▶ Particularily suitable for door connection
- ▶ Locking cam
- ▶ Hybrid combination of power 2.8 mm terminals and signal either 0.64 or 1.5 mm ideal for window lift motor
- ▶ Mounting onto panel through hole is water tight except HCCMHPE24BKAF



Sicma 24 & 29 ways



Sicma 42 ways

Technical characteristics

Number of ways		24 ways	24 ways	29 ways	42 ways
Terminals	Sicma 0.64 mm	-	12	21	-
	Sicma 1.5 mm	18	8	4	34
	Sicma 2.8 mm	6	4	4	8
Temperature range		-40°C to +125°C	-40°C to +125°C	-40°C to +125°C	-40°C to +125°C
Terminal retention force	Sicma 0.64 mm	> 60 N	> 60 N	> 60 N	-
	Sicma 1.5 mm	> 100 N	> 100 N	> 100 N	> 100 N
	Sicma 2.8 mm	> 120 N	> 120 N	> 120 N	> 120 N
Terminal insertion force	Sicma 0.64 mm	< 8 N	< 8 N	< 8 N	-
	Sicma 1.5 mm	< 8 N	< 8 N	< 8 N	< 8 N
	Sicma 2.8 mm	< 10 N	< 10 N	< 10 N	< 10 N
Connector mating force		< 60 N	< 60 N	< 60 N	< 60 N

Main Part Numbers

Female housings	211PC249S0020	PPI0000162	211PC299S0042*	211PC429S0034
Male housings	HCCMHPE24BKAF	PPI0000167	211PL299S0042	211PL429S0034
Cap with sliding lever	-	211A0042**	211A0042**	-

*Version with SRS shorting bar available: 211PC299S0043

**Optional cap for the male housings

For terminals, please check page 21



Airbag Connectors

APEX® Connectors

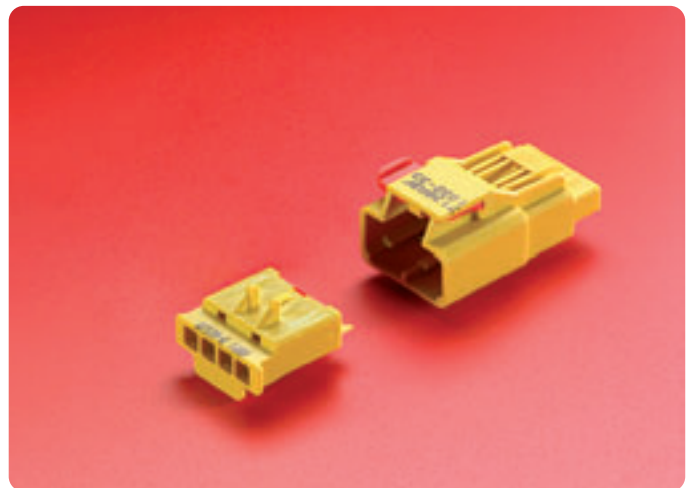
2 & 4 ways

Features

- ▶ APEX® terminal technology
- ▶ Meets or exceeds USCAR performance standards
- ▶ Available shorting bars to protect circuits during mate and unmate
- ▶ Excellent for Airbag and other SRS circuits
- ▶ Fully assembled, mat seal connector design
- ▶ Terminal Position Assurance (TPA) device to detect partially installed terminals
- ▶ CPA available
- ▶ See the APEX® 150 product family for additional shorting bar connectors for Airbag applications



APEX® 1.5 mm 2 & 4 ways sealed



APEX® 2.8 mm 4 ways unsealed

Technical characteristics

Number of ways		2 ways	4 ways	4 ways
Pitch		4 mm	4 mm	5.25 mm
Sealing protection		IPx 9K	IPx 9K	Unsealed
Terminals	Female & male APEX® 1.5 mm	2	4	-
	Female & male APEX® 2.8 mm	-	-	4
Temperature range		-40°C to +125°C	-40°C to +125°C	-40°C to +125°C
Terminal retention force	APEX® 1.5 mm	> 90 N	> 90 N	-
	APEX® 2.8 mm	-	-	> 75 N
Terminal insertion force	APEX® 1.5 mm	< 15 N	< 15 N	-
	APEX® 2.8 mm	-	-	< 4.5 N
Connector mating force		< 75 N	< 75 N	< 75 N
Number of mechanical codings		4	4	1

Main Part Numbers

Female housings	54550415	54550410	54550400
Male housings	54550416	54550414	54550402

Other codings available, please check our website
For terminals, please check pages 10-11



Airbag Connectors

DCS Connectors

2 & 4 ways

Features

- ▶ Number of ways: 2, 4
- ▶ Mechanical coding
- ▶ Connector position assurance (CPA)
- ▶ Terminal position assurance (TPA) in combination with cable clamping
- ▶ Male connector with shorting bar available
- ▶ Several colour versions available
- ▶ Go-no-Go connector locking



DCS 1.5 mm 4 ways SpringLock



DCS 2 & 4 ways

Technical characteristics

Number of ways	2 ways	4 ways	4 ways SpringLock
Terminals Male & female DCS-2 1.5 mm	2	4	4
Sealing protection	-	-	IP68
Temperature range	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C
Terminal retention force	> 70 N	> 70 N	> 70 N
Terminal insertion force	< 10 N	< 10 N	> 10 N
Connector mating force	< 80 N	< 80 N	< 100 N

Main Part numbers

Female housings	60204004	60203904	17210445
Male housings	60303404	60303204	17210446

Other color codings available, please check our website
 For terminals, please check page 12



Airbag Connectors

Sicma Connectors - Unsealed

2 & 4 ways

Features

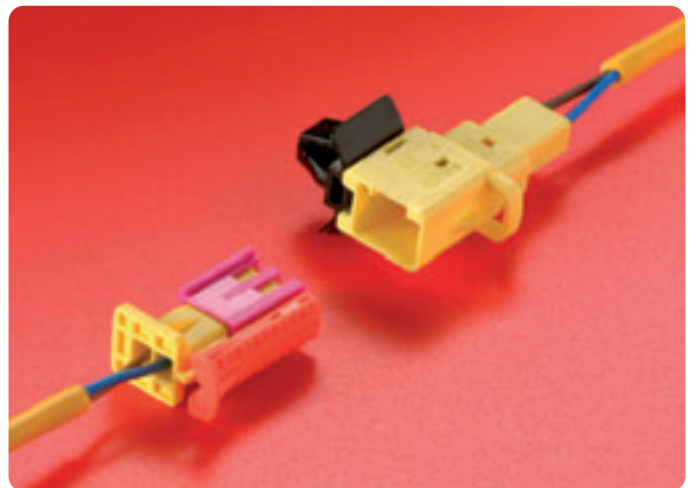
- ▶ High reliability
- ▶ Terminal Position Assurance (TPA)
- ▶ Connector Position Assurance (CPA)
- ▶ Mechanical polarization
- ▶ Gold plated shorting clip option for male housing



Sicma 2 ways



Sicma 2 ways with CPA



Sicma 4 ways with CPA

Technical characteristics

Number of ways	2 ways	2 ways with CPA	4 ways with CPA
Pitch	5 mm	4.5 mm	4.5 mm
Terminals	Female & male Sicma 1.5 mm	2	4
Temperature range	-40°C to +125°C	-40°C to +120°C	-40°C to +120°C
Terminal retention force	> 100 N	> 120 N	> 120 N
Terminal insertion force	< 5 N	< 15 N	< 15 N
Connector mating force	< 30 N	< 80 N	< 80 N

Main Part numbers

Female housings	211PC022S6010	60201724	60203914
Male housings	211PL022S6010	60301134	60303234

Other color codings available, please check our website
 For terminals, please check page 21



Flex Interconnect systems

10 & 20 ways

Features

- Delivered on reel
- High density female connector suitable to be integrated into a modular connector system
- Hinge secondary lock with strain relief feature
- Mechanical polarization at 180° in female module holder
- Termination to flex by Starcrimp technology



Flex connector



Flex 10 ways



Flex 22 ways female



Flex 22 ways male

Technical characteristics

Number of ways		10 ways	20 ways
Terminals	0.64 mm DuoTwin Starcrimp terminal for FPC	8 per row	8 per row
	2.8 mm SICMA terminal for FPC	2 per row	2 per row
Number of rows		1	2
Temperature range		-40°C to + 85°C	-40°C to + 85°C
Terminal retention force		> 100 N	> 100 N
Terminal insertion force		< 15 N	< 15 N
Connector mating force		< 60 N	< 60 N

Main Part numbers

Female module holder and corresponding female module for Flexible Flat Cable (FPC)	250PC109F0001	250BC122F1001
Module holder female	-	250BC122F0001
Male housings wire	250PL109S0001	250PL229S1001

For terminals, please check pages 21, 22



Full Interconnect - Active Safety applications

26 & 47 ways

Features

- Number of ways: 26, 47
- Radial sealing and single wire and/or mat sealing
- Mechanical coding
- Terminal position assurance (TPA)
- Slider and lever for connector mating force reduction and connector position assurance (CPA)
- Suitable for harsh environment
- Other female housings available, please consult us
- Applications: ABS (Antilog Breaking System) and ESC (Electronic Stability Control) applications



26 ways



46 ways



47 ways

Technical characteristics

Number of ways		26 ways	47 ways
Terminals	Female DuoTwin 0.64 mm	22	-
	Female DCS-2 1.5 mm	-	43
	Female 4.8 mm*	-	4
	Female 6.3 mm*	4	-
Temperature range			
Terminal retention force	DuoTwin 0.64 mm	> 60 N	-
	DCS 1.5 mm	-	> 70 N
Terminal insertion force	DuoTwin 0.64 mm	< 5 N	-
	DCS 1.5 mm	-	< 10 N
Connector mating force		< 60N	Consult us

*Consult us

Part numbers

Female housings	90227900	30432501
Cover	90228000	39007101
Male housing assembly	90231700	39007101



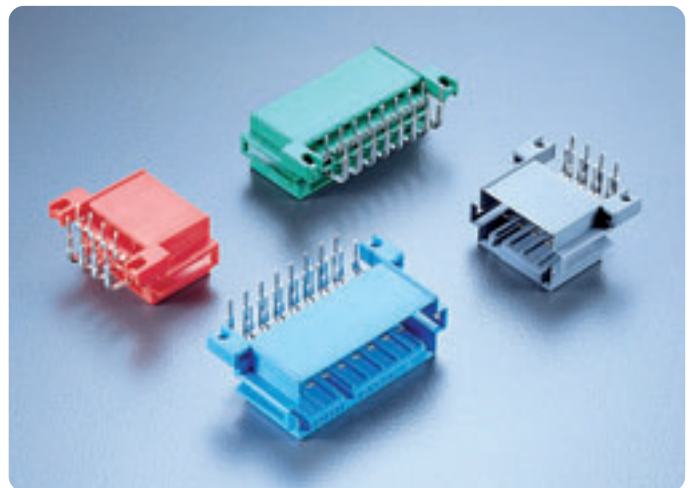
DCS 2.8 mm unsealed Full Interconnect 8 & 16 ways

Features

- Number of ways: 8, 16
- Mechanical coding
- Several coding versions available
- Combinations:
 - Female + male housing (2, 4, 8 ways)
 - Female + pin-header (8 & 16 ways)
- Typical applications: passenger compartment interconnect requiring power terminals



DCS 8 ways female & male housings



DCS right angled pin-headers 8 & 16 ways

Technical characteristics

Number of ways	8 ways	16 ways
Terminals DCS-2 2.8 mm	8	16
Temperature range	-40°C to +105°C	-40°C to +105°C
Terminal retention force	> 80 N	> 80 N
Terminal insertion force	< 4 N	< 4 N
Connector mating force	< 80 N	< 80 N

Main Part numbers

Female housings	RT94PH08WHT	RT94PH16GYT
Male Pin header straight	RT94BS08WHT	RT94BS16GYT
Male Pin header right angle	RT94BR08WHT	RT94BR16GYT

RT94PH08WHT stands for black color coding

Other color codings available, please check our website
For terminals, please check page 12



GTS sealed Full Interconnect Powertrain applications CMC Interface

32, 48, 64 & 112 ways

Features

- ▶ Number of ways: 32, 48, 64 & 112
- ▶ CMC (Connecteur Modulaire pour Calculateur) is one of the most popular interfaces for Engine Management Electronic Control Units
- ▶ Sealed connector for Electronic Control Unit applications
- ▶ Mat seal and circumferential interface seal
- ▶ Accepts reversible wire dress cover
- ▶ Optional wire cover at 45° for the 48 ways housing: PPI0001538
- ▶ Right or left mountable rotating lever for mate assistance
- ▶ Suitable for harsh environment
- ▶ 15 g sinus vibration resistant with tin terminals
- ▶ 1.5 Bar pressure proof sealing
- ▶ Typical application: Powertrain Electronic Control Units



32 ways



48 ways



64 ways



112 ways

Technical characteristics

Number of ways	32 ways	48 ways	64 ways	112 ways
Sealing protection	IPx9K/IP68	IPx9K/IP68	IPx9K/IP68	IPx9K/IP68
Terminals	0.64 mm GTS-1 1.5 mm GTS-2	24 8	40 8	56 8 24
Temperature range	-40°C to +125°C	-40°C to +125°C	-40°C to +125°C	-40°C to +125°C
Terminal retention force	> 100 N	> 100 N	> 100 N	> 100 N
Terminal insertion force	< 10 N	< 10 N	< 10 N	< 10 N
Connector mating force	< 60 N	< 60 N	< 60 N	< 60 N
Number of mechanical coding	Female housings 4	4	3	1

Main Part numbers

	PPI0001493	PPI0001495	PPI0001501	PPI0001489 grey 32 ways F765000 brown 48 ways PPI0001487 black 32 ways
Female housings	-	-	-	
Male housings	F670000	17464807	F932300	1746B207M
Cover 32 ways	PPI0001522	-	-	PPI0001522
Cover 48 ways	-	F965000	-	F965000
Cover 64 ways	-	-	PPI0001526	-

Other color codings available, please check our website
For terminals, please check page 17



HC3 round terminal 1.15 mm unsealed Full Interconnect 2 to 13 & 15 ways

Features

- ▶ Single row 3.2 mm pitch
- ▶ 1 piece female housing
- ▶ HC3 round terminal system
- ▶ Male terminal diameter: 1.15 mm
- ▶ Secondary locking by plastic flap
- ▶ Pin-header to be soldered on PCB
- ▶ Mechanical polarization
- ▶ Typical applications:
unsealed vehicle areas with
space limitation



HC3 female



HC3 Pin headers

Technical characteristics

Number of ways	2 ways	3 ways	4 ways	5 ways	6 ways	7 ways	8 ways
Terminals HC3 1.15 mm	2	3	4	5	6	7	8
Temperature range	-40°C to +105°C	-40°C to +105°C	-40°C to +105°C	-40°C to +105°C	-40°C to +105°C	-40°C to +105°C	-40°C to +105°C
Terminal retention force	> 70 N	> 70 N	> 70 N	> 70 N	> 70 N	> 70 N	> 70 N
Terminal insertion force	< 10 N	< 10 N	< 10 N	< 10 N	< 10 N	< 10 N	< 10 N
Connector mating force	Consult us	Consult us	Consult us	Consult us	Consult us	Consult us	Consult us

Main Part numbers

Female housings	MHS02000WH00T	MHS03012WH00T	MHS04023WH00T	MHS05023WH00T	MHS06034WH00T	MHS07045WH00T	MHS08000WH00T
Right Angle housings	MHR02000GV90	MHR03000GVA90	MHR04023GV90	MHR05023GV90	MHR06034GV90	MHR07045GV90	MHR08000GV90
Straight male housings	MHR02000GV	MHR03012GV	MHR04023GV	MHR05023GV	MHR06034GV	MHR07045GV	MHR08000GV

Technical characteristics

Number of ways	9 ways	10 ways	11 ways	12 ways	13 ways	15 ways
Terminals HC3 1.15 mm	9	10	11	12	13	15
Temperature range	-40°C to +105°C	-40°C to +105°C	-40°C to +105°C	-40°C to +105°C	-40°C to +105°C	-40°C to +105°C
Terminal retention force	> 70 N	> 70 N	> 70 N	> 70 N	> 70 N	> 70 N
Terminal insertion force	< 10 N	< 10 N	< 10 N	< 10 N	< 10 N	< 10 N
Connector mating force	Consult us	Consult us	Consult us	Consult us	Consult us	Consult us

Main Part numbers

Female housings	MHS09000WH00T	MHS10045WH00T	MHS11045WH00T	MHS12045WH00T	MHS13034WH00T	MHS15000WH00T
Right Angle male housings	MHR09000GV90	MHR10045GV90	MHR11045GV90	MHR12045GV90	MHR13034GV90	MHR15000GV90
Straight male housings	MHR09000GV	MHR10045GV	MHR11045GV	MHR12045GV	MHR13034GV	MHR15000GV

Other color codings available, please check our website
For terminals, please check page 18



Sicma sealed Full Interconnect

6, 24, 56 & 90 ways

Features

- Number of ways: 6, 24, 56 and 90
- Female housing connection to male housing for PCB mount
- High sealing performance ensured by rear mat-seal and front interfacial seal
- Slider for mating force reduction and blind mating
- Integrated secondary lock device allowing detection of terminals (TPA)
- Typical applications: Electrical parking brake, clutchless gear box controller, liquified Petrol Gas controller, Engine management electronic control unit



6 ways



24 ways



56 ways



90 ways

Technical characteristics

Number of ways	6 ways	24 ways	56 ways	90 ways
Number of rows	1	3	2	3
Pitch between rows	-	5 mm	6 mm	6 mm
Sealing protection	IP 68	IP 68	IP 68	IP 68
1.5 mm Sicma terminal	4	18	56	90
2.8 mm Sicma terminal	2	6	-	-
Temperature range	-40°C to +105°C	-40°C to +125°C	-40°C to +125°C	-40°C to +125°C

Main Part numbers

Female housings	211PC069S0049	211PC249S0033	PPI0001258	211PC902S0009
Female housings with locking cam				90251400
Cover	-	-	211A560008	211A900008 90157601(for 90251400)
Locking cam	-	211A247001	211A567007	211A900007
Straight male housings	-	HCCPHE24BKA00F	-	90162900
Right angled male housings	F159000	HCCPHE24BKA90F	F135200	PPI0001336

211PC249S0033 stands for 24 ways female **black color coding**

Other color codings available, please check our website
For terminals, please check page 21



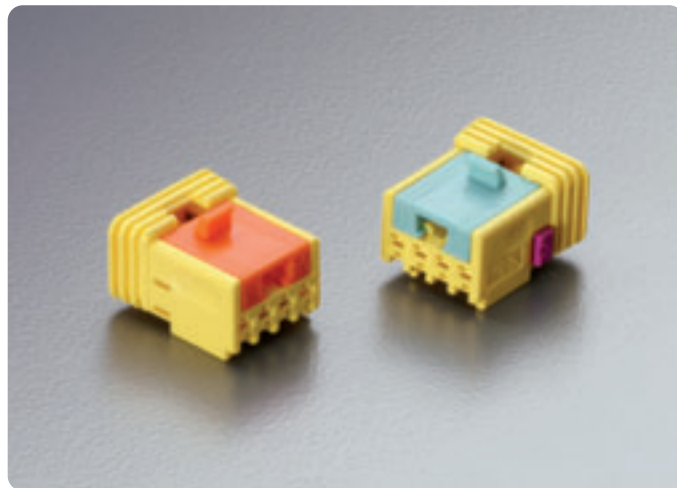
Interior Equipment

DCK unsealed Connectors

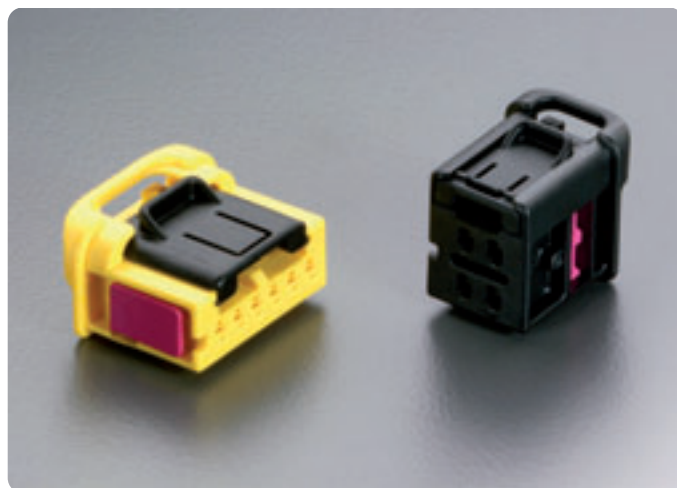
4 & 6 ways

Features

- ▶ Number of ways: 4, 6
- ▶ Mechanical coding
- ▶ Terminal position assurance (TPA)
- ▶ Spring lock feature for Connector Position Assurance (CPA)



DCK 1.5 mm 4 ways (30203304)



DCK 1.5 mm 4 & 6 ways

Technical characteristics

Number of ways		4 ways	4 ways	4 ways	6 ways
Terminals	Female DCK 1.5 mm	4	-	4	6
	Female DCK 2.8 mm	-	4	-	-
Temperature range		-40°C to +105°C	-40°C to +105°C	-40°C to +105°C	-40°C to +105°C
Terminal retention force	Female DCK 1.5 mm	> 70 N	-	> 70 N	> 70 N
	Female DCK 2.8 mm	-	> 90 N	-	-
Terminal insertion force	Female DCK 1.5 mm	< 10 N	< 15 N	< 10 N	< 10 N
	Female DCK 2.8 mm	-	< 100 N	-	-
Connector mating force		< 100 N	< 100 N	< 100 N	< 100 N

Part numbers

Female housings	30211901*	30212101*	30203304*	30203504*
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*This part number has a customer logo, please consult us for neutral version

For terminals, please check page 14



Interior Equipment

DCS unsealed Connectors

1, 2, 5, 6, 7 & 8 ways

Features

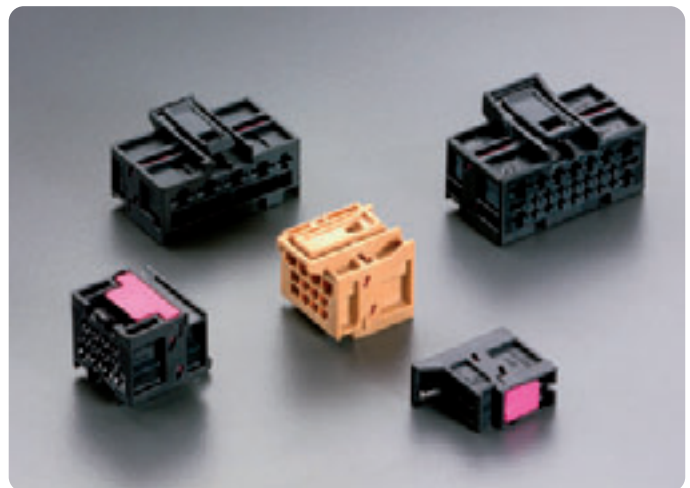
- ▶ Number of ways: 1, 2, 5, 6, 7, 8
- ▶ Mechanical coding
- ▶ Terminal position assurance (TPA)
- ▶ Several colour codings available



DCS 1, 2 ways



DCS 7 ways



DCS 5, 6, 16, 18 ways

Technical characteristics

Number of ways		1 way	2 ways	5 ways	6 ways	6 ways	7 ways	8 ways
Terminal size	Female DCS-2 1.5 mm	-	-	-	6	-	-	-
	Female 1.5 mm*	-	-	-	-	-	4	-
	Female DCS-2 2.8 mm	-	-	1	-	6	-	8
	Female 4.8 mm*	-	-	4	-	-	-	-
	Female DCS-1 6.3 mm	-	-	-	-	-	3	-
	Female DCS-1 9.5 mm	1	2	-	-	-	-	-
Temperature range		-40°C to +105°C	-40°C to +105°C	-40°C to +105°C	-40°C to +105°C	-40°C to +105°C	-40°C to +105°C	-40°C to +105°C
Terminal retention force	Female DCS 1.5 mm	-	-	-	> 70 N	-	-	-
	Female DCS 2.8 mm	-	-	> 90 N	-	> 90 N	-	> 90 N
	Female DCS 6.3 mm	-	-	-	-	-	> 120 N	-
	Female DCS 9.5 mm	> 160 N	> 160 N	-	-	-	-	-
Terminal insertion force	Female DCS 1.5 mm	-	-	-	< 10 N	-	-	-
	Female DCS 2.8 mm	-	-	< 15 N	-	< 15 N	-	< 15 N
	Female DCS 6.3 mm	-	-	-	-	-	< 20 N	-
	Female DCS 9.5 mm	< 30 N	< 30 N	-	-	-	-	-
Connector mating force		< 75 N	< 75 N	< 100 N	< 100 N	< 100 N	< 90N	< 90N

*Consult us

Main Part numbers

Female housings	60200801**	60200901**	30201801**	30220801**	30210601**	60231111**	60210101**
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**This part number has a customer logo, please consult us for neutral version

Other color codings available, please check our website
For terminals, please check pages 12-13



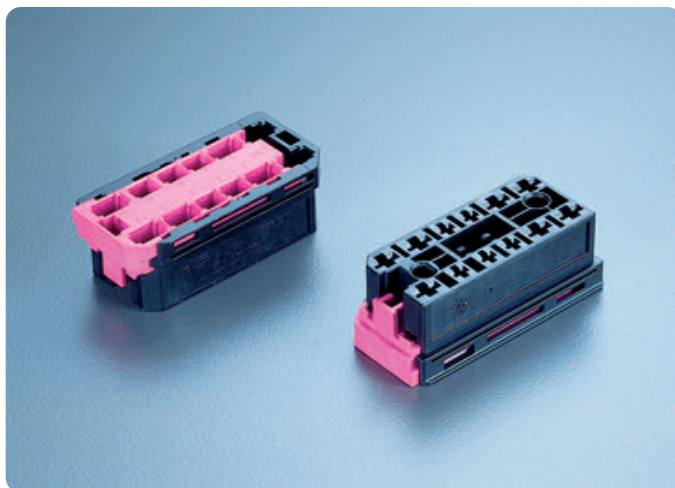
Interior Equipment

DCS unsealed Connectors

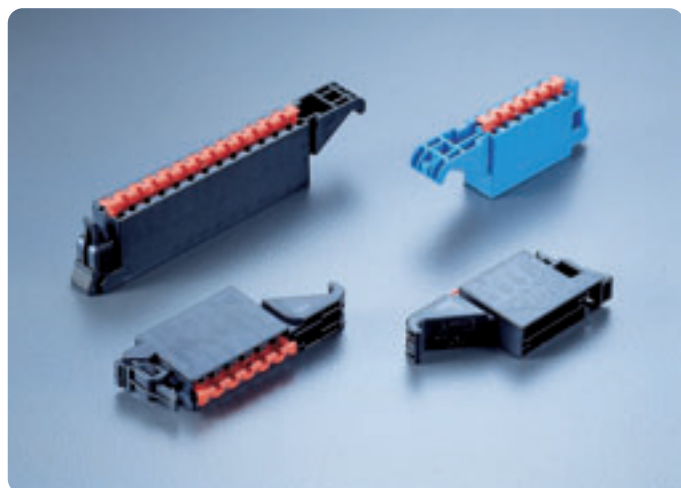
11, 12, 15, 16, 18, 23 & 24 ways

Features

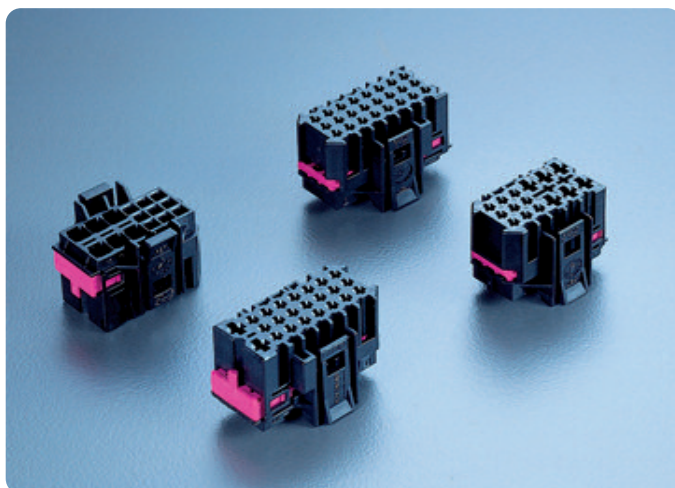
- ▶ Number of ways: 11, 12, 15, 16, 18, 23, 24
- ▶ Mechanical coding
- ▶ Terminal position assurance (TPA)
- ▶ Several colour codings available



DCS 12 ways (30231801)



DCS 8, 11, 12 ways



DCS 15, 23 & 24 ways

Technical characteristics

Number of ways		11 ways	12 ways	12 ways	15 ways	16 ways	18 ways	23 ways	24 ways
Terminal size	Female DCS-2 1.5 mm	-	-	-	9	12	18	21	24
	Female DCS-1 2.8 mm	11	12	-	-	-	-	-	-
	Female DCS-2 2.8 mm	-	-	5	6	4	-	2	-
	Female 4.8 mm*	-	-	7	-	-	-	-	-
Temperature range		-40°C to +105°C	-40°C to +105°C	-40°C to +105°C	-40°C to +105°C	-40°C to +105°C	-40°C to +105°C	-40°C to +105°C	-40°C to +105°C
Terminal retention force	Female DCS 1.5 mm	-	-	-	> 70 N	> 70 N	> 70 N	> 70 N	> 70 N
	Female DCS 2.8 mm	> 90 N	> 90 N	> 90 N	> 90 N	> 90 N	-	> 90 N	-
Terminal insertion force	Female DCS 1.5 mm	-	-	-	< 10 N	< 10 N	< 10 N	< 10 N	< 10 N
	Female DCS 2.8 mm	< 15 N	< 15 N	< 15 N	< 15 N	< 15 N	< 15 N	< 15 N	-
Connector mating force		< 90 N	< 90 N	consult us	< 100 N	< 100 N	< 100 N	< 100 N	< 100 N

*Consult us

Main Part numbers

Female housings	60210901**	60210601**	30231801**	30231501**	30232301**	30220901**	30231601**	30231701**
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**This part number has a customer logo, please consult us for neutral version

Other color codings available, please check our website
For terminals, please check page 12



Interior Equipment

DCK/DuoTwin unsealed Connectors MiniTwin female housings

4, 8, 12 & 18 ways

Features

- ▶ Number of ways: 4, 8, 12, 18, 36, 40, 52, 60, 78
- ▶ Mechanical coding
- ▶ Terminal position assurance (TPA)
- ▶ Lever for connector mating force reduction and connector position assurance
- ▶ Several coding and colour versions available



4 ways



8 ways



12-18 ways

Technical characteristics

Number of ways	4 ways	8 ways	12 ways*	12 ways**	18 ways	18 ways*	18 ways**
Terminal size Female DuoTwin/DCK0.64 mm	4	8	12	12	18	18	18
Number of module(s)	1	1	1	1	1 module of 18 w or 2 modules of 9 w	1	1
Distance between rows	2.54 mm	2.54 mm	2.54 mm	2.54 mm	3.5 mm	2.54 mm	2.54 mm
Temperature range	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C
Terminal retention force Female DuoTwin/DCK0.64 mm	> 60 N	> 60 N	> 60 N	> 60 N	> 60 N	> 60 N	> 60 N
Terminal insertion force Female DuoTwin/DCK0.64 mm	< 5 N	< 5 N	< 5 N	< 5 N	< 5 N	< 5 N	< 5 N
Connector mating force	< 75 N	< 75 N	< 75 N	< 75 N	< 75 N	< 75 N	< 75 N

*Consult us

Main Part numbers

Female module holder 180° (black)	-	-	PPI0000807*	PPI0000561**	-	-	PPI0000557*
Female module holder 90° (black)	-	-	PPI0000810*	PPI0000562**	17281809B	-	PPI0000558**
Terminal module 1	-	-	PPI0000803*	PPI0000494**	17281880A (18 ways)	-	PPI0000498**
Terminal module 2	-	-	-	-	17280900 (9 ways)	-	-
Terminal module 3	-	-	-	-	17280960 (9 ways)	-	-
Assembly kit	PPI0000946	PPI0000896	-	-	-	PPI0000792*	-

*Qualified Fiat 9.91320

**Qualified PSA B217050 and GMW3191

Other color codings available, please check our website
For terminals, please check pages 14 & 15



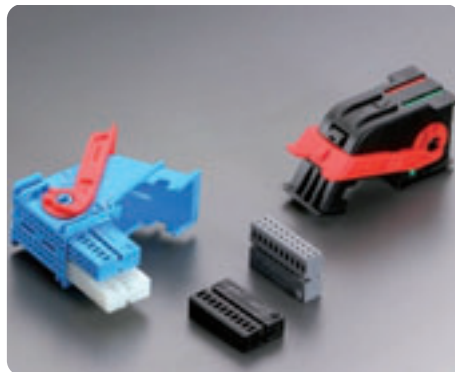
Interior Equipment

DCK/DuoTwin unsealed Connectors MiniTwin female housings

36, 40, 52, 60 & 78 ways



36 ways



40 ways Long



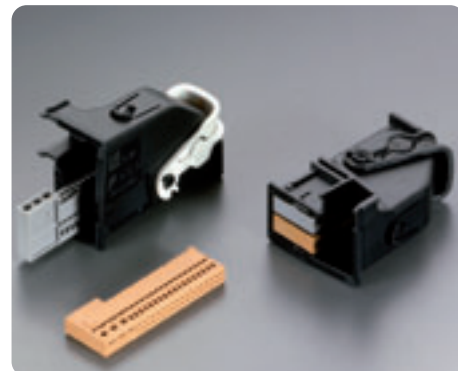
40 ways Short



52 ways



60 ways



78 ways

Technical characteristics

Number of ways		36 ways	40 ways short	40 ways long	52 ways	60 ways	78 ways
Terminal size	Female DuoTwin/ DCK0.64 mm	36	40	40	52	60	72
	Female 2.8 mm*	-	-	-	-	-	6
Number of module(s)		3	2	1	2	3	2
Distance between rows		2.54 mm	2.54 mm	2.54 mm	2.54 mm	2.54 and 5.86 mm	Hybrid
Temperature range		-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C
Terminal retention force	Female DuoTwin/DCK0.64 mm	> 60 N	> 60 N	> 60 N	> 60 N	> 60 N	> 60 N
Terminal insertion force	Female DuoTwin/DCK0.64 mm	< 5 N	< 5 N	< 5 N	< 5 N	< 5 N	< 5 N
Connector mating force		< 75 N	< 75 N	< 75 N	< 75 N	< 75 N	< 80 N

*Consult us

Main Part numbers

Female module holder 180° (black)	-	-	-	-	F001300	30990511
Female module holder 90° (black)	17283669A	-	-	-	-	-
Terminal module 1	17281800 (18 ways)	-	-	-	F070300	-
Terminal module 2	17280950 (9 ways)	-	-	-	F170300	30233112
Terminal module 3	17280990 (9 ways)	-	-	-	F270300	30233108
Assembly kit	-	17284050	100840BLK	PPI0000637	-	-

Other color codings available, please check our website
For terminals, please check pages 14 & 15



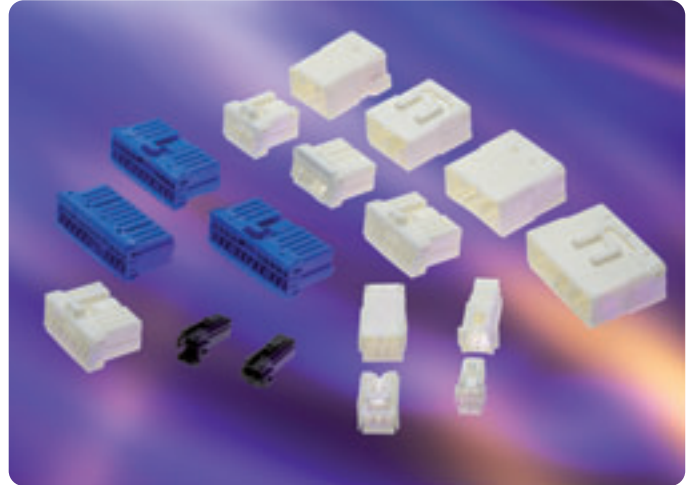
Interior Equipment

MCS 1.8 mm unsealed Connectors

1 to 4, 6, 8, 10, 14, 18 & 20 ways

Features

- ▶ Housings suitable for wires from 0.35 mm² up-to 1.5 mm² and carrying up-to 14 A at 23 °C
- ▶ Cost effective solution for unsealed applications
- ▶ User friendly with integrated secondary lock device allowing for detection of unseated terminals (TPA)
- ▶ Easy and quick connection system with latching lock principle



MCS housings

Technical characteristics

Number of ways		1 way	2 ways	3 ways	4 ways	6 ways	8 ways
Temperature range		-30°C to +105°C	-30°C to +105°C	-30°C to +105°C	-30°C to +105°C	-30°C to +105°C	-30°C to +105°C
Terminal retention force		> 80 N	> 80 N	> 80 N	> 80 N	> 80 N	> 80 N
Terminal insertion force		< 10 N	< 10 N	< 10 N	< 10 N	< 10 N	< 10 N
Connector mating force		< 35 N	< 35 N	< 35 N	< 35 N	< 65 N	< 65 N
Number of mechanical coding	Female housings	1	3	2	1	3	2
	Male housings	1	2	2	0	2	2

Main Part numbers

Female housings	MCHFHPE01BK	MCHFHPE02WH	MCHFHPE03WH	MCHFHPE04WH	MCHFHPE06WH	MCHFHPE08WH
Male housings	MCHMHPE01BK	MCHMHPE02WH	MCHMHPE03WH	-	MCHMHPE06WH	MCHMHPE08WH

Technical characteristics

Number of ways with MCS 1.8 mm terminals		10 ways	12 ways	14 ways	18 ways	20 ways
Temperature range		-30°C to +105°C	-30°C to +105°C	-30°C to +105°C	-30°C to +105°C	-30°C to +105°C
Terminal retention force		> 80 N	> 80 N	> 80 N	> 80 N	> 80 N
Terminal insertion force		< 10 N	< 10 N	< 10 N	< 10 N	< 10 N
Connector mating force		< 120 N	< 120 N	< 120 N	< 120 N	< 120 N
Number of mechanical coding	Female housings	1	4	1	2	3
	Male housings	1	3	1	2	3

Main Part numbers

Female housings	MCHFHPE10WH	MCHFHPE12WH	MCHFHPE14WH	MCHFHPE18WH	MCHFHPE20WH
Male housings	MCHMHPE10WH	MCHMHPE12WH	MCHMHPE14WH	MCHMHPE18WH	MCHMHPE20WH

Example: MCHFHBE02WH stands for **2 ways female white color coding**

Other color codings available, please check our website
For terminals, please check page 20



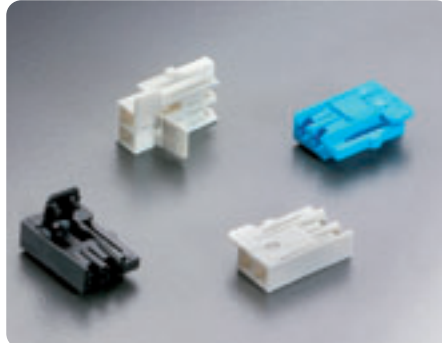
Interior Equipment

Sicma unsealed Connectors

2, 3, 6, 8 & 12 ways

Features

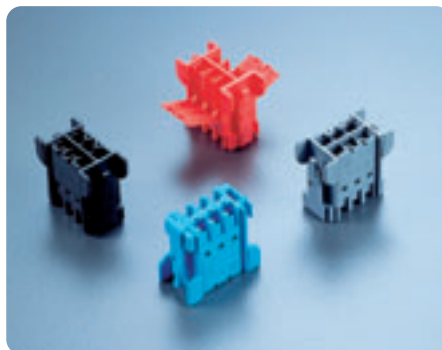
- Number of ways: 2, 3, 6, 8 and 12 ways)
- Hinge secondary lock for Terminal Position Assurance (TPA)
- Mechanical polarization distinguished by colors



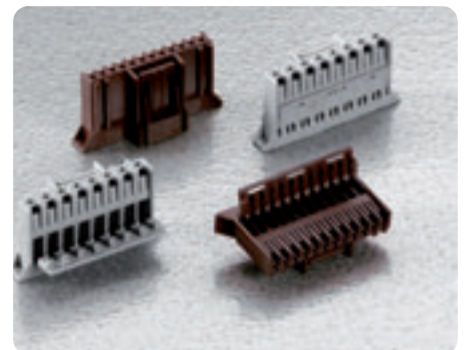
Sicma 2 ways



Sicma 3 ways



Sicma 6 ways



Sicma 8 & 12 ways

Technical characteristics

Number of ways		2 ways	3 ways	6 ways	8 ways	12 ways
Terminals size	Sicma 1.5 mm	-	3	-	-	12
	Sicma 2.8 mm	2	-	6	8	-
Temperature range		-40°C to +125°C	-40°C to +125°C	-40°C to +125°C	-40°C to +125°C	-40°C to +125°C
Terminal retention force	Sicma 1.5 mm	-	> 65 N	-	> 100 N	> 100 N
	Sicma 2.8 mm	> 120 N	-	> 120 N	-	-
Terminal insertion force	Sicma 1.5 mm	-	< 5 N	-	< 7 N	< 7 N
	Sicma 2.8 mm	< 7 N	-	< 7 N	-	-
Connector mating force		< 30 N	< 30 N	< 30 N	-	-

Main Part numbers

Female housings	211PC023S0017	210PC032S0007	211PC063S0006	211PC083S0017	211PC122S0017
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Other color codings available, please check our website
For terminals, please check page 21



Interior Equipment

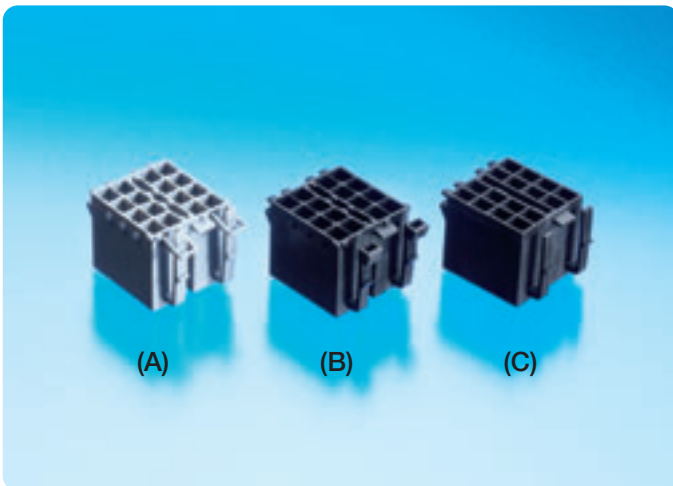
Car Radio Connectors 6 & 16 ways

Features

- ▶ Number of ways: 6, 16
- ▶ Connector systems compatible with car radio ISO standards
- ▶ Unsealed connectors
- ▶ Mechanical coding and colour coding
- ▶ Terminal position assurance (TPA - 40 ways)
- ▶ 40 ways FAKRA male connector can be equipped with fibre optic module and mini fuse



6 ways ISO



16 ways ISO



28 ways Car Radio Interconnect (6+6+16 w)

Technical characteristics

Number of ways		6 ways yellow*	6 ways green*	16 ways Loud Speaker Protected latches (A)	16 ways Loud Speaker Ergonomic latches (B)	16 ways Loud Speaker Straight latches (C)
Terminal size	Female DCS-2 1.5 mm	6	6	-	-	-
	Female DCS-2 2.8 mm	-	-	16	16	16
Temperature range		-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C
Terminal retention force	Female DCS 1.5 mm	> 70 N	> 70 N	-	-	-
	Female DCS 2.8 mm	-	-	> 90 N	> 90 N	> 90 N
Terminal insertion force	Female DCS 1.5 mm	< 10 N	< 10 N	-	-	-
	Female DCS 2.8 mm	-	-	< 15 N	< 15 N	< 15 N
Connector mating force		< 75 N	< 75 N	Consult us	Consult us	Consult us

*Both pieces can be attached together

Main Part numbers

Female housings	PPI0000725	PPI0000724	17401680	17401600	30240001
Pin Header	3700007189	3700007189	3700007189	3700007189	3700007189

For terminals, please check page 12



Interior Equipment

Car Radio Connectors

20, 36 & 40 ways

Features

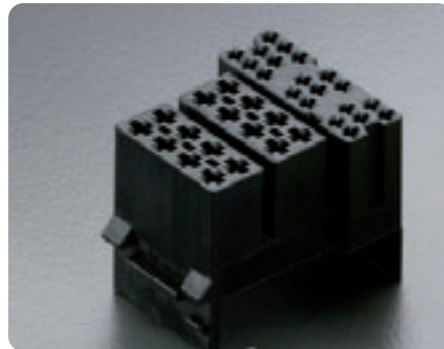
- ▶ Number of ways: 20, 36, 40
- ▶ Connector systems compatible with car radio ISO standards
- ▶ Unsealed connectors
- ▶ Mechanical coding and colour coding
- ▶ Terminal position assurance (TPA - 40 ways)
- ▶ 40 ways FAKRA male connector can be equipped with fibre optic module and mini fuse



20 ways ISO



20 ways ISO with TPA



36 ways ISO



FAKRA 40 ways

Technical characteristics

Number of ways		20 ways	20 ways with TPA	36 ways	40 ways FAKRA
Terminal size	Female DuoTwin 0.64/DCK0.64	-	-	-	24
	Female DCS-2 1.5 mm	20	20	20	-
	Female DCS-2 2.8 mm	-	-	16	16
Temperature range		-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C
Terminal retention force	Female DuoTwin 0.64	-	-	-	> 60 N
	Female DCS 1.5 mm	> 70 N	> 70 N	> 70 N	-
	Female DCS 2.8 mm	-	-	> 90 N	> 90 N
Terminal insertion force	Female DuoTwin 0.64	-	-	-	< 5 N
	Female DCS 1.5 mm	< 10 N	< 10 N	< 10 N	-
	Female DCS 2.8 mm	-	-	< 15 N	< 15 N
Connector mating force		Consult us	Consult us	Consult us	< 75 N

Main Part numbers

Female housings	17402000	30221001	30232101	30235101
Pin Header	3700007189	3700007189	3700007189	30331900

For terminals, please check pages 12, 14, 15



Exterior Lighting Connectors

2 & 3 ways

Features

- ▶ **H4 unsealed version**
 - ▶ Female 3 ways 8 mm 90° terminal with hinged back cover
 - ▶ Suitable for lamp H4, wire size from 1 to 2.5 mm²

- ▶ **PG18.5 sealed & unsealed versions/PG20 sealed version**
 - ▶ Terminal Position Assurance (TPA)
 - ▶ Go-no-Go housing locking principle
 - ▶ Suitable for wires from 0.35 to 2 mm²
 - ▶ Optional rear latch feature for easy unmating

- ▶ **PGJ19 sealed version**
 - ▶ Additional terminal locking device on front part of the housing
 - ▶ Terminal Position Assurance (TPA), 2 mechanical polarization either H8-H9 or H9
 - ▶ Go-no-Go housing locking principle
 - ▶ Suitable for wires from 0.35 to 2 mm²



H4 unsealed



PG18.5 unsealed & sealed versions



PG18.5 sealed latch over protection version



PG 20 sealed & sealed latch over protection versions



PGJ19 unsealed

Technical characteristics

	H4 unsealed	PG18.5 unsealed	PG18.5 sealed	PG18.5 sealed latch over protection	PG20 sealed	PG20 sealed latch over protection	PGJ19 sealed
Number of ways	3 ways	2 ways	2 ways	2 ways	2 ways	2 ways	2 ways
Lamp	H3-H4	P13W	PSX26W	P13W	PSY24W SV	PSX24W	H8-H11
Coding*	-	N° 1	N° 3	N° 1	N° 4	N° 7	Yellow
*Other lamps with different coding for the connector	-	-	P13W	-	PS19W / PSY19W PSX24W	PS19W / PSY19W/PSY24WSV	H9
Sealing protection	-	-	IP69K	IP69K	IP69K	IP69K	IP69K
Terminal	8 mm Finclick	GTS-2 1.5 mm	GTS-2 1.5 mm	GTS-2 1.5 mm	GTS-2 1.5 mm	GTS-2 1.5 mm	DCS-2 2.8 mm
Temperature range	- 40°C to +125°C	- 40°C to +125°C	- 40°C to +125°C	- 40°C to +125°C	- 40°C to +125°C	- 40°C to +125°C	- 40°C to +125°C
Terminal retention force	> 100 N	> 100 N	> 100 N	> 100 N	> 100 N	> 100 N	> 100 N
Terminal insertion force	< 15 N	< 5 N	< 5 N	< 5 N	< 10 N	< 10 N	< 15 N
Connector mating force	< 60 N	< 60 N	< 60 N	< 60 N	< 60 N	< 60 N	< 60 N

Main Part numbers

PPI0000813	PPI0001038*	F826100*	F421400*	F650200*	PPI0001350*	240PC023S4019
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*Other codings available, please consult us

For terminals, please check pages 12, 16, 17



APEX® SensoMate™ 1.2 mm sealed Connectors 3 & 4 ways

Features

- ▶ APEX® terminal technology and performance in our smallest package
- ▶ Sealing technology: cable seal
- ▶ SWS (Cable seal) terminal seal design
- ▶ SensoMate 1.2 connectors mate to AK 1.2 device interface
- ▶ Heavy Duty - for Diesel engine vibration and temperature duty cycles
- ▶ Compliant with USCAR design guidelines and performance standards
- ▶ Superior single-piece housing construction
- ▶ Terminal Position Assurance (TPA) device to detect partially installed terminals
- ▶ CPA available



APEX® 1.2 SensoMate™ 1.2

Technical characteristics

	3 ways	4 ways
Number of ways	3 ways	4 ways
Sealing protection	IP 68	IP 68
Terminal APEX® 1.2 mm	3	4
Temperature range	-40°C to +125°C	-40°C to +125°C
Terminal retention force	> 80 N	> 80 N
Terminal insertion force	< 30 N	< 30 N
Connector mating force	< 45 N	< 45 N

Main Part numbers

	54200378	F782100
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For terminals, please check pages 10-11



APEX® SensoMate™ 2.8 mm sealed Connectors

2 & 3 ways

Features

- ▶ APEX® terminal technology and performance in our smallest package
- ▶ Sealing technology: cable seal
- ▶ SWS (Cable seal) terminal seal design
- ▶ SensoMate 2.8 connectors mate to certain Bosch fuel injectors and components
- ▶ Heavy Duty - for Diesel engine vibration and temperature duty cycles
- ▶ Compliant with USCAR design guidelines and performance standards
- ▶ Superior single-piece housing construction
- ▶ Terminal Position Assurance (TPA) device to detect partially installed terminals



APEX® 2.8 SensoMate 2 & 3 ways

Technical characteristics

Number of ways	2 ways	3 ways
Sealing protection	IP 68	IP 68
Terminal APEX® 1.2 mm	-	-
Terminal APEX® 2.8 mm	2	3
Temperature range	-40°C to +125°C	-40°C to +125°C
Terminal retention force	> 90 N	> 90 N
Terminal insertion force	< 15 N	< 15 N
Connector mating force	< 75 N	< 75 N

Main Part numbers

	F745000	F155000
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For terminals, please check pages 10-11

DCS SensoMate™ 1.5 mm sealed Connectors

2 ways

Features

- ▶ Number of ways: 2
- ▶ Sealing: circumferential silicone ring (front) and cable seal (rear)
- ▶ Mechanical coding
- ▶ Terminal position assurance (TPA)
- ▶ Steel spring connector locking
- ▶ High vibration resistance
- ▶ Suitable for Common Rail and all high pressure injector systems



2 ways common rail



DCS Injector 2 ways

Technical characteristics

	2 ways	2 ways (common rail)
Number of ways	2 ways	2 ways (common rail)
Sealing protection	IP67	IP67
Terminals	2	2
Temperature range	-40°C to +150°C	-40°C to +150°C
Terminal retention force	> 70 N	> 70 N
Terminal insertion force	< 10 N	< 10 N
Connector mating force	< 75 N	< 90 N

Main Part numbers

Female housings	F456200	240PC024S8014
Mating/unmating grip short	-	240A020016
Mating/unmating grip long	-	F852100

For terminals, please check page 12



DCS SensoMate™ 2.8 mm sealed Connectors

2 & 3 ways

Features

- ▶ Number of ways: 2, 3
- ▶ Sealing: circumferential silicone ring (front) and cable seal (rear)
- ▶ Mechanical coding
- ▶ Terminal position assurance (TPA)
- ▶ Suitable for all high pressure injector systems
- ▶ High vibration resistance
- ▶ Suitable for Common Rail and all high pressure injector systems



DCS SensoMate™ 2.8 2 ways



DCS SensoMate™ 2.8 3 ways

Technical characteristics

Number of ways	2 ways	2 ways (accepting back wire cap)	3 ways (accepting back wire cap)
Sealing protection	IP 67	IP 67	IP 67
Terminal DCS-2 2.8 mm	2	2	3
Temperature range	-40°C to +125°C	-40°C to +125°C	-40°C to +125°C
Terminal retention force	> 90 N	> 90 N	> 90 N
Terminal insertion force	< 15 N	< 15 N	< 15 N
Connector mating force	< 60 N	< 60 N	< 60 N

Main Part numbers

	240PC023S0117	F232200	F872100
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For terminals, please check page 12



DCS G-Lock 2.8 mm sealed Connectors

2, 3, 4, 5 & 7 ways

Features

- ▶ Number of ways: 2, 3, 4, 5, 7
- ▶ Axial sealing and single wire sealing
- ▶ Mechanical coding
- ▶ Terminal position assurance (TPA)
- ▶ Steel spring connector locking
- ▶ Several coding versions available
- ▶ Suitable for high vibration and high temperature (engine mount applications)



DCS 2 ways



DCS 2 ways (PPI0001137 + PPI0001139)



DCS 2 ways (240PC02S1001SG1)



DCS 2, 3, 4 ways



DCS 3, 5, 7 ways

Technical characteristics

Number of ways		2 ways	2 ways	2 ways	2 ways
Sealing protection		IP67	IP67	IP67	IP67
Terminals	Female DCS-1 2.8 mm	2	2	2	2
Temperature range		-40°C to +125°C	-40°C to +125°C	-40°C to +125°C	-40°C to +125°C
Terminal retention force	Female DCS 2.8 mm	> 90 N	> 90 N	> 90 N	> 80 N
Terminal insertion force	Female DCS 2.8 mm	< 15 N	< 15 N	< 15 N	< 20 N
Connector mating force		< 60 N	< 60 N	< 75 N	< 75 N

Main Part numbers

Female housings	PPI0001137	240PC02S1001	60402901	240PC02S1001SG1
Cover	PPI0001139	-	-	-

Technical characteristics

Number of ways		3 ways	3 ways	4 ways	5 ways	7 ways
Sealing protection		IP67	IP67	IP67	IP67	IP67
Terminals	Female DCS-1 2.8 mm	3	3	4	5	7
Temperature range		-40°C to +125°C	-40°C to +125°C	-40°C to +125°C	-40°C to +125°C	-40°C to +125°C
Terminal retention force	Female DCS 2.8 mm	> 90 N	> 90 N	> 90 N	> 90 N	> 90 N
Terminal insertion force	Female DCS 2.8 mm	< 15 N	< 15 N	< 15 N	< 15 N	< 15 N
Connector mating force		< 75 N	< 75 N	< 75 N	< 90 N	< 90 N

Main Part numbers

Female housings	60400301	240PC03S0002	240PC04S0007	60400401	60400501
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Other color codings available, please check our website
For terminals, please check page 12



DCS sealed sensors/actuators 2 & 3 ways

Features

- ▶ Number of ways: 2, 3
- ▶ Radial sealing and single wire sealing
- ▶ Mechanical coding
- ▶ Generic engine sensor interface
- ▶ High vibration and high temperature resistance
- ▶ High current carrying capacity



DCS 2 ways 60405401



DCS 2, 3, 4, 7 ways

Technical characteristics

Number of ways		2 ways	2 ways	3 ways	3 ways
Sealing protection		IP67	IP67	IP67	IP67
Terminals	Female DCS-2 2.8 mm	2	2	3	1
	Female 4.8 mm*	-	-	-	2
Temperature range		-40°C to +125°C	-40°C to +125°C	-40°C to +125°C	-40°C to +125°C
Terminal retention force	Female DCS 2.8 mm	> 90 N	> 90 N	> 90 N	> 90 N
Terminal insertion force	Female DCS 2.8 mm	< 15 N	< 15 N	< 15 N	< 15 N
Connector mating force		consult us	consult us	consult us	consult us

*Consult us

Main Part numbers

Female housings		60411601	60405401	60491501	60430401
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For terminals, please check page 12



DCS sealed sensors/actuators 4, 6, 7 & 11 ways

Features

- ▶ Number of ways: 4, 6, 7, 11
- ▶ Radial sealing and single wire sealing
- ▶ Mechanical coding
- ▶ Generic engine sensor interface
- ▶ High vibration and high temperature resistance
- ▶ High current carrying capacity



DCS 6 ways (F348000 + F929000)



DCS 7 ways (PPI0000888 + PPI0000894)



DCS 11 ways

Technical characteristics

Number of ways		4 ways	6 ways	7 ways	7 ways	11 ways
Sealing protection		IP67	IP67	IP67	IP67	IP67
Terminals	Female DCS-2 1.5 mm	-	6	-	7	-
	Female DCS-2 2.8 mm	4	-	7	-	11
Temperature range		-40°C to +125°C	-40°C to +125°C	-40°C to +125°C	-40°C to +125°C	-40°C to +125°C
Terminal retention force	Female DCS 1.5 mm	-	> 70 N	-	> 70 N	-
	Female DCS 2.8 mm	> 90 N	-	> 90 N	-	> 90 N
Terminal insertion force	Female DCS 1.5 mm	-	< 10 N	-	< 10 N	-
	Female DCS 2.8 mm	< 15 N	-	< 15 N	-	< 15 N
Connector mating force		consult us	< 75 N	consult us	< 75 N	consult us

*Consult us

Main Part numbers

	60411311	F348000	60411401	PPI0000888	60411101
Female housings					
Cover	-	F929000	-	PPI0000894	-

For terminals, please check page 12



DCK sealed Connectors

5 & 6 ways

Features

- ▶ Number of ways: 5, 6
- ▶ Radial sealing and single wire sealing
- ▶ Mechanical coding
- ▶ Terminal position assurance (TPA)
- ▶ Spring lock connector position assurance (6 ways)
- ▶ Generic engine sensor interface
- ▶ High vibration and high temperature resistance
- ▶ High current carrying capacity



DCK sealed 5 ways



DCK sealed 6 ways

Technical characteristics

		5 ways	6 ways
Number of ways		5 ways	6 ways
Sealing protection		IP67	IP67
Terminals	Female DCK 1.5 mm	-	6
	Female DCK 2.8 mm	5	-
Temperature range		-40°C to +125°C	-40°C to +125°C
Terminal retention force	Female DCK 1.5 mm	-	> 70 N
	Female DCK 2.8 mm	> 90 N	-
Terminal insertion force	Female DCK 1.5 mm	-	< 10 N
	Female DCK 2.8 mm	< 15 N	-
Connector mating force		consult us	consult us

Main Part numbers

Female housings	30401301	30401101
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For terminals, please check page 14



Power Distribution Components

DCS sealed Relay Sockets

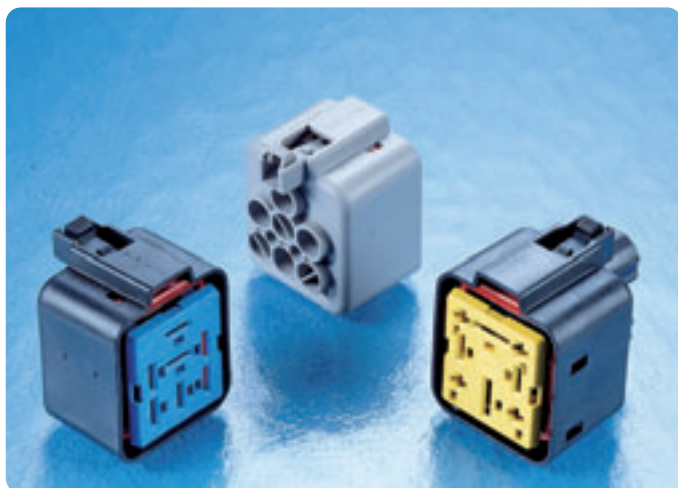
4, 7, 8, 9 & 11 ways

Features

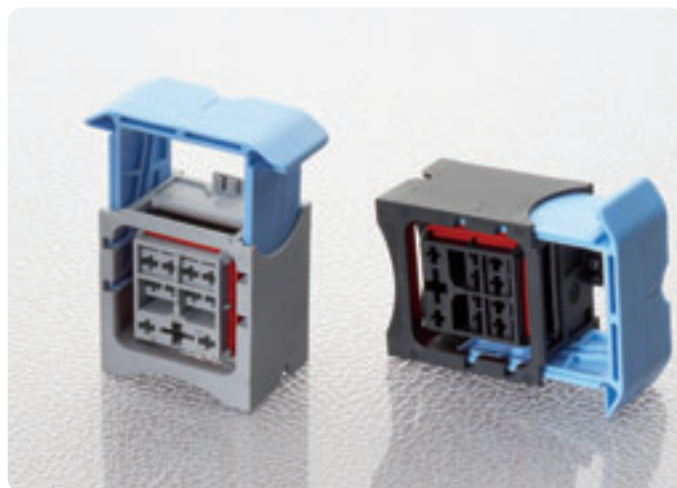
- ▶ Number of ways: 4, 7, 8, 9, 11
- ▶ Radial sealing and single wire sealing
- ▶ Mechanical coding
- ▶ Terminal position assurance (TPA)
- ▶ Slider for connector mating force reduction and connector position assurance (9 ways, 11 ways)



DCS Relay 4 & 8 ways



DCS Relay 7 ways



DCS Relay 9 & 11 ways

Technical characteristics

Number of ways	4 ways		7 ways	8 ways			9 ways		11 ways		11 ways	
Sealing protection	IP 67		IP 67	IP 67			IP 67		IP 67		IP 67	
Terminal size (mm)	6.3	9.5	6.3	2.8	6.3	9.5	2.8	9.5	2.8	9.5	2.8	9.5
Number of DCS terminals	2	2	7	4	2	2	8	1	10	1	10	1
Temperature range	-40°C to +125°C											
Terminal retention force	> 120 N	> 160 N	> 120 N	> 90 N	> 120 N	> 160 N	> 90 N	> 160 N	> 90 N	> 160 N	> 90 N	> 120 N
Terminal insertion force	< 20 N	< 30 N	< 20 N	< 15 N	< 20 N	< 30 N	< 15 N	< 30 N	< 15 N	< 30 N	< 15 N	< 30 N
Connector mating force	< 120 N		< 160 N	< 160 N			≤ 90 N		≤ 90 N		≤ 160 N	

Main Part numbers

	F501100	60430131	60431011	17211105	17211105A	60432001
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For more details, please contact us
For terminals, please check pages 12 & 13



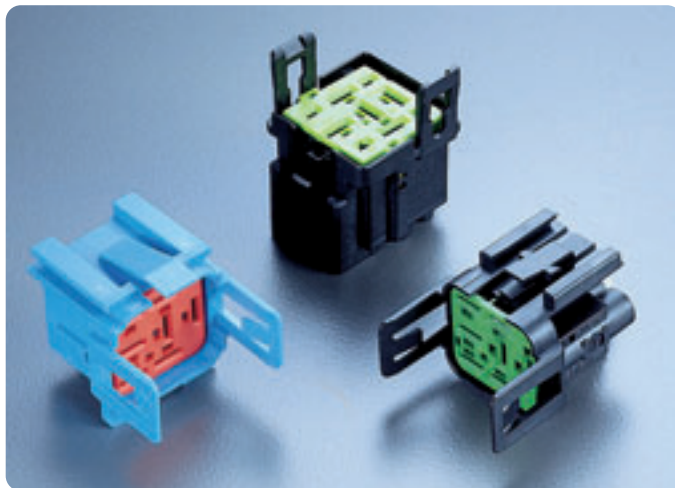
Power Distribution Components

DCS unsealed Relay Sockets

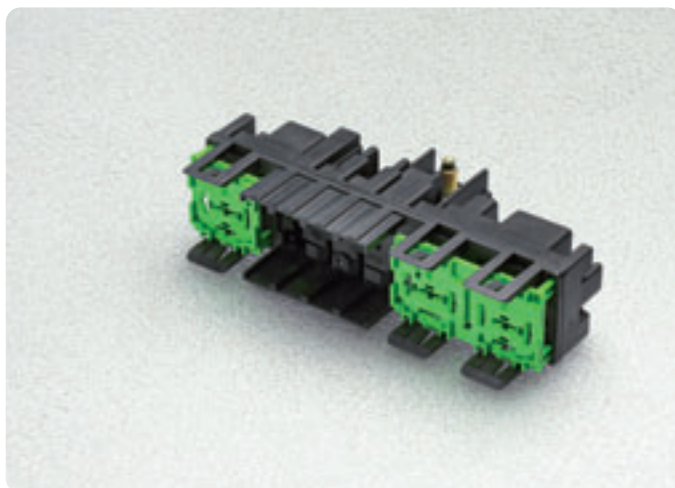
5, 7 & 13 ways

Features

- ▶ Number of ways: 5, 7, 13
- ▶ Mechanical coding
- ▶ Terminal position assurance (TPA)



DCS Relay 5 & 7 ways



DCS Relay 13 ways

Technical characteristics

Number of ways	5 ways	7 ways	13 ways	
Terminal size (mm)	6.3	6.3	6.3	8
Number of DCS-1 terminals	5	7	11	2
Temperature range	-40°C to +120°C	-40°C to +120°C	-40°C to +85°C	
Terminal retention force	> 120 N	> 120 N	> 100 N	
Terminal insertion force	< 20 N	< 20 N	< 15 N	< 20N
Connector mating force	< 160 N	< 160 N	< 100 N	

Main Part numbers

	60430601	60230001	230BF139S0002
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For terminals, please check page 13



Power Distribution Components

Sicma sealed Relay Sockets

7, 8 & 11 ways

Features

- ▶ Number of ways: 7, 8 & 11
- ▶ Single wire seal
- ▶ Circumferential interface seal
- ▶ 15 g vibration performance
- ▶ Front terminal position assurance
- ▶ Slider for reduced mating assistance



Sicma Relay 8 ways



Sicma Relay 7 ways



Sicma Relay 11 ways

Technical characteristics

Number of ways	7 ways	8 ways	11 ways
Number of Sicma 2.8 mm terminals	6	6	10
Number of 8 mm terminals*	1	2	1
Sealing protection	IP68/IPx9k	IP68/IPx9k	IP68/IPx9k
Temperature range	-40°C to +125°C	-40°C to +125°C	-40°C to +125°C
Terminal retention force	> 120 N	> 120 N	> 120 N
Terminal insertion force	< 20 N	< 20 N	< 20 N
Connector mating force	< 60 N	< 60 N	< 60 N

Main Part numbers

Part Numbers	240PC079S1022	240PC089S0015	F469200
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*Consult us

For terminals, please check page 21



Power Distribution Components

DCS sealed Fuse Box Interconnect

47, 62 & 63 ways

Features

- ▶ Number of ways: 47, 62, 63
- ▶ Radial sealing and single wire sealing
- ▶ Mechanical coding
- ▶ Terminal position assurance (TPA)
- ▶ Threaded bolt connector for mating force reduction and connector position assurance



DCS 62, 63 ways

Technical characteristics

Number of ways		47 ways	62 ways	63 ways
Sealing protection		IP67	IP67	IP67
Terminals	Female DCS 1.5 mm	33	31	40
	Female DCS-2 2.8 mm	10	16	13
	Female DCS-1 Box 4.8 mm	4	9	6
	Female DCS-1 Box 9.5 mm	-	6	4
Temperature range		-40°C to +125°C	-40°C to +125°C	-40°C to +125°C
Terminal retention force	Female DCS 1.5 mm	> 70 N	> 70 N	> 70 N
	Female DCS 2.8 mm	> 90 N	> 90 N	> 90 N
	Female DCS 4.8 mm	> 120 N	> 120 N	> 120 N
	Female DCS 9.5 mm	-	> 160 N	> 160 N
Terminal insertion force	Female DCS 1.5 mm	< 10 N	< 10 N	< 10 N
	Female DCS 2.8 mm	< 15 N	< 15 N	< 15 N
	Female DCS 4.8 mm	< 20 N	< 20 N	< 20 N
	Female DCS 9.5 mm	-	< 30 N	< 30 N
Connector mating torque		9 Nm	9 Nm	9 Nm

Part numbers

Female housings	30431901	30431801	30431701
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For terminals, please check pages 12-13

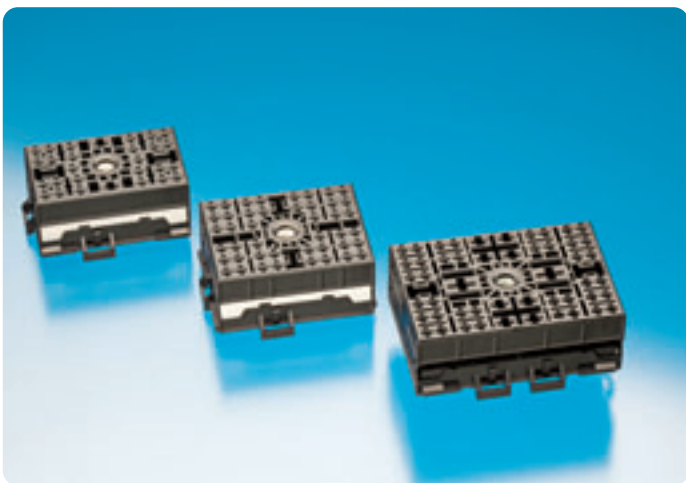


Power Distribution Components

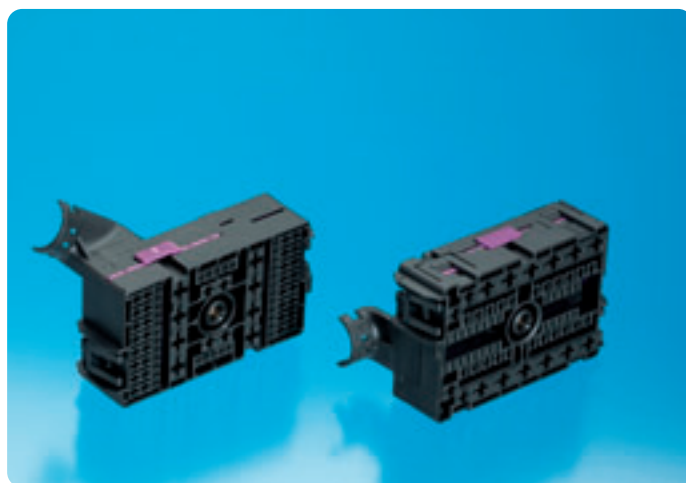
DCK & DCS unsealed Fuse Box Interconnect 28, 44, 50, 64 & 78 ways

Features

- ▶ Number of ways: 28, 44, 50, 64, 78
- ▶ Mechanical coding
- ▶ Terminal position assurance (TPA)
- ▶ Threaded bolt connector for mating force reduction and connector position assurance



DCS 28, 44, 50 ways



DCS 64, 78 ways

Technical characteristics

Number of ways		28 ways	44 ways	50 ways	64 ways	78 ways
Terminals	Female DCS 1.5 mm	-	-	-	26	34
	Female DCK 2.8 mm	26	44	40	-	-
	Female DCS-2 2.8 mm	-	-	-	22	32
	Female DCS-1 Box 4.8 mm	2	-	8	-	-
	Female 4.8 mm*	-	-	-	4	4
	Female DCS-1 Box 9.5 mm	-	-	2	12	8
Temperature range		-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +105°C	-40°C to +105°C
Terminal retention force	Female DCS 1.5 mm	-	-	-	> 70 N	> 70 N
	Female DCK 2.8 mm	> 90 N	> 90 N	> 90 N	-	-
	Female DCS 2.8 mm	-	-	-	> 90 N	> 90 N
	Female DCS 4.8 mm	> 120 N	-	> 120 N	-	-
	Female DCS 9.5 mm	-	-	> 160 N	> 160 N	> 160 N
Terminal insertion force	Female DCS 1.5 mm	-	-	-	< 10 N	< 10 N
	Female DCK 2.8 mm	< 15 N	< 15 N	< 15 N	-	-
	Female DCS 2.8 mm	-	-	-	< 15 N	< 15 N
	Female DCS 4.8 mm	< 20 N	-	< 20 N	-	-
	Female DCS 9.5 mm	-	-	< 30 N	< 30 N	< 30 N
Connector mating torque		consult us	consult us	consult us	9 Nm	9 Nm

*Consult us

Part numbers

Female housings	90232100	90232300	90232500	F454100	F154100
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For terminals, please check pages 12-13 & 14

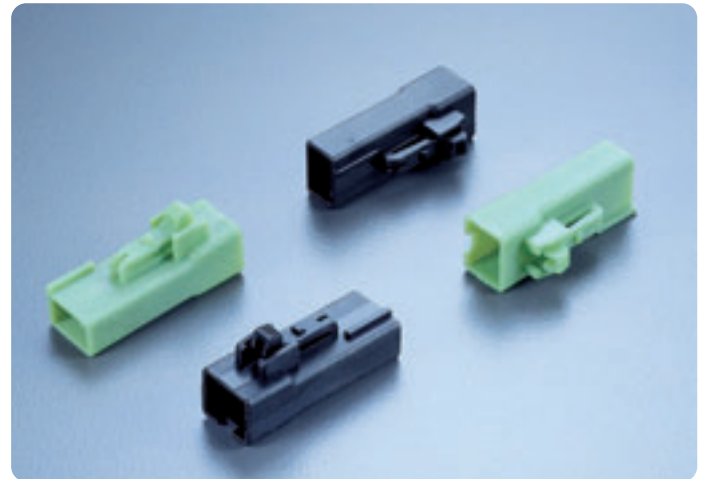


Fuse holders

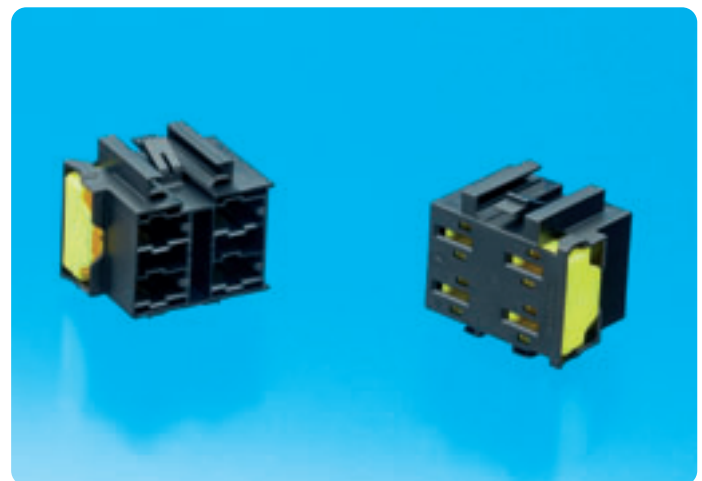
1 & 4 ways

Features

- ▶ Number of ways: 1, 4
- ▶ Mechanical coding
- ▶ Terminal position assurance (TPA)
- ▶ Several coding versions available



1 way



4 ways

Technical characteristics

Number of ways	1 way	4 ways
Terminals	1	-
Male DCS-1 9.5 mm 8 mm*	-	4
Temperature range	-40°C to +125°C	-40°C to +125°C
Terminal retention force DCS 9.5 mm	> 160 N	-
Terminal insertion force DCS 9.5 mm	< 30 N	-
Connector mating force	< 75 N	< 100 N

*Consult us

Main Part numbers

Female housings	60300701	PPI0001180
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For terminals, please check page 13



Squib 11 mm FCI interface

Features

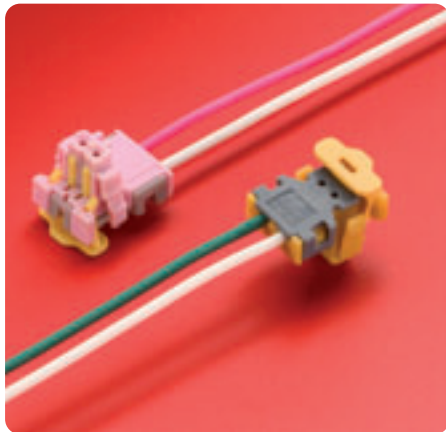
- Scoop improved interface
- Version without Connector Position Assurance (CPA) available / reversed locking legs
- Version with pre-mated Connector Position Assurance (CPA) available
- Delivered in different wire lengths, wire gauges and types, please consult us for customization



FFR90/FFT90



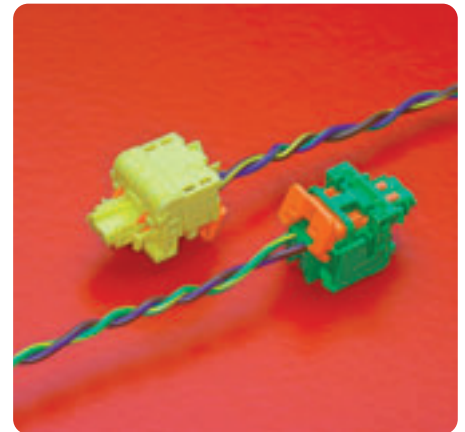
FFR180



FFB90



FIB90



IFB180

Technical characteristics

Serviceability	Manually serviceable		Tool serviceable	Manually serviceable	
	Coil	Ferrite	Ferrite	Ferrite	Ferrite
EMI filtering device	Coil	Ferrite	Ferrite	Ferrite	Ferrite
Locking type	Active CPA button pre-mated	Reversed locking legs	Reversed locking legs	Reversed locking legs Active CPA button pre-mated	Active CPA button pre-mated
Termination technology	Welded version	Crimped version	Crimped version	Crimped version	Crimped version
Contact resistance	< 10 mΩ	< 10 mΩ	< 10 mΩ	< 10 mΩ	< 10 mΩ
Dielectric test	750V / DC	750V / DC	750V / DC	750V / DC	750V / DC
Temperature range	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C
Pull out force	> 150 N	> 150 N	> 150 N	> 150 N	> 150 N

Main Part numbers

Right angle version					
Product code	IFB 90-1	FFR 90-3	FFT90-3	FFB 90-4	FIB 90-1
Coding A	61208300	54550266	54550281	54560219	61206300
Coding B	61208310	54550267	54550282	54560220	61206310
Coding C	61208320	54550268	54550283	54560221	61206320
Straight version					
Product code	IFB 180-1	FFR 180-3			
Coding A	61208200	61207100			
Coding B	61208210	61207110			
Coding C	61208220	-			

All our squibs will be delivered in different wire lengths, wire gauges and types, please consult us for customization



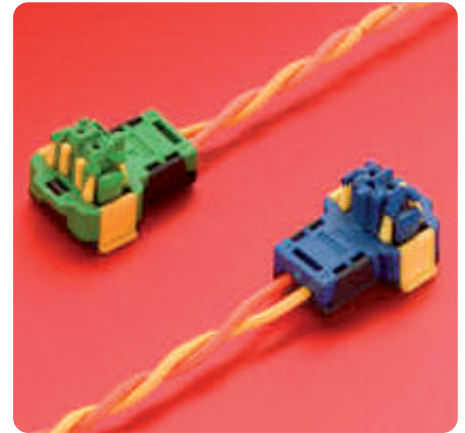
Squib 11 mm AK-1 interface

Features

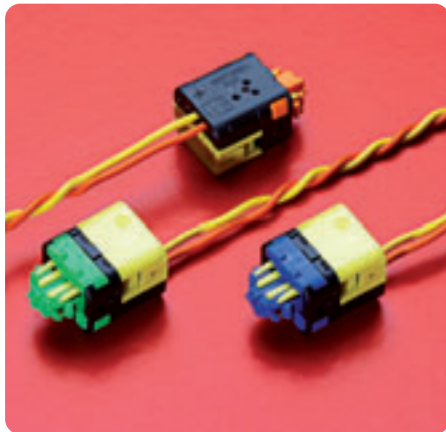
- Scoop improved interface
- Delivered in different wire lengths, wire gauges and types, please consult us for customization



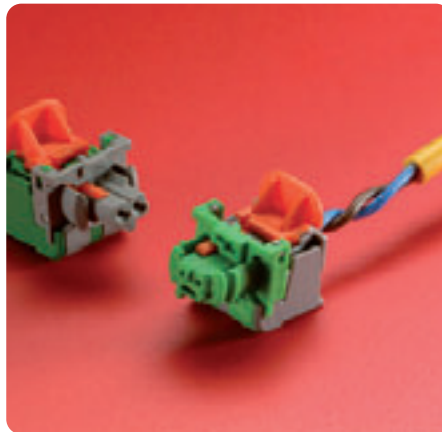
FAB90



FAC90



FAC180



IAE180



FAB180

Technical characteristics

Serviceability	Manually serviceable			
	Ferrite	Ferrite	Coil	Ferrite
EMI filtering device	Active CPA button	Active CPA button, closed	Active CPA button	Active CPA button
Locking type	Active CPA button	Active CPA button, closed	Active CPA button	Active CPA button
Termination technology	Crimped version	Crimped version	Crimped version	Welded version
Contact resistance	< 10 mΩ	< 10 mΩ	< 10 mΩ	< 10 mΩ
Dielectric test	750V / DC	750V / DC	750V / DC	750V / DC
Temperature range	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C
Pull out force	> 150 N	> 150 N	> 150 N	> 150 N

Main Part numbers

Right angle version				
Product Code	FAB 90-3	FAC90-2	-	FAB90-5
Coding A	61206300	61208000	-	PP10001625
Coding B	61206310	61208010	-	PP10001626
Coding C	61206320	61208020	-	PP10001627
Straight version				
Product Code	FAB 180-2	FAC 180-2	IAE 180-1	
Coding A	PPI0001891	PPI0000147	61206801	
Coding B	PPI0001892	PPI0000153	61206811	
Coding C	PPI0001893	PPI0000152	61206821	

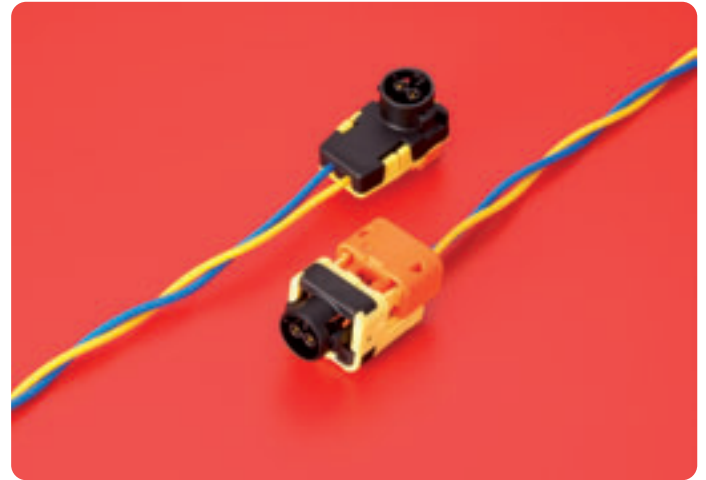
All our squibs will be delivered in different wire lengths, wire gauges and types, please consult us for customization



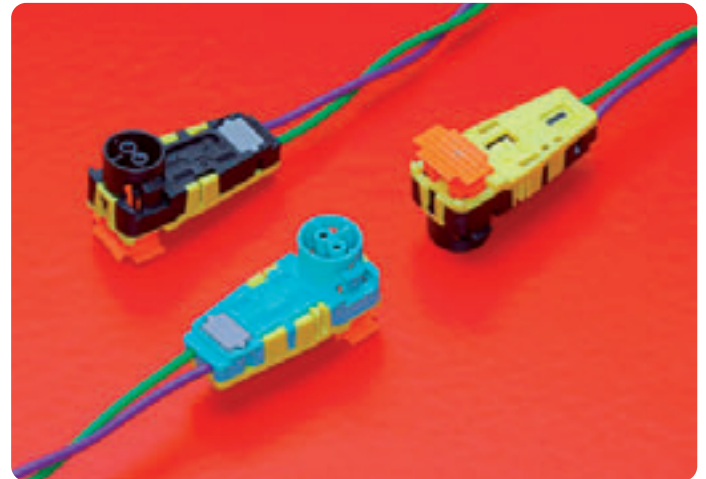
Squib 11 mm AK-2 Connectors

Features

- ▀ Scoop proof interface (AK-2 Interface)
- ▀ Excellent mating behavior even under difficult mating conditions (blind mating)
- ▀ Robust & ergonomic design
- ▀ Full compatibility to existing initiator specification
- ▀ Delivered in different wire lengths, wire gauges and types, please consult us for customization



FPB90 & FPB180



IPB90

Technical characteristics

Serviceability	Manually serviceable	
	Ferrite	Coil
EMI filtering device	Active CPA button	Active CPA button
Locking type	Welded version	Welded version
Termination technology	< 10 mΩ	< 10 mΩ
Contact resistance	750V / DC	750V / DC
Dielectric test	-40°C to +85°C	-40°C to +85°C
Temperature range	> 150 N	> 150 N
Pull out force		

Main Part numbers

Right angle version		
Product code	FPB 90-5	IPB 90-2
Coding I	PPI0001721	61208100
Coding II	PPI0001722	61208110
Coding III	PPI0001723	61208120
Straight version		
Product code	FPB 180-5	
Coding I	PPI0001142	
Coding II	PPI0001143	
Coding III	PPI0001144	

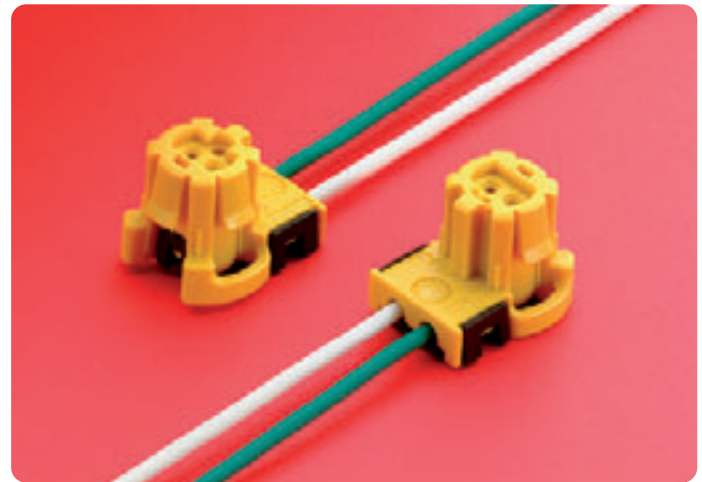
All our squibs will be delivered in different wire lengths, wire gauges and types, please consult us for customization



Squib 11 mm UC Connectors

Features

- RCS (Round Contact System), One piece terminal for ferrite tubes. Selectively gold plated, 2 contact points
- Non serviceable UC type locking legs
- Various coding options available
- No retainer assembly is required as the connector directly mates to the 11 mm initiator
- Delivered in different wire lengths, wire gauges and types, please consult us for customization



FUN90

Technical characteristics

Serviceability	Non serviceable
EMI filtering device	Ferrite
Locking type	Locking legs
Termination Technology	Crimped version
Version	Right angle
Contact resistance	< 10 mΩ
Dielectric test	750V / DC
Temperature range	-40°C to +85°C
Pull out force	> 160 N

Main Part numbers

Right angle version	
Product Code	FUN 90-3
Part numbers	54560218

All our squibs will be delivered in different wire lengths, wire gauges and types, please consult us for customization

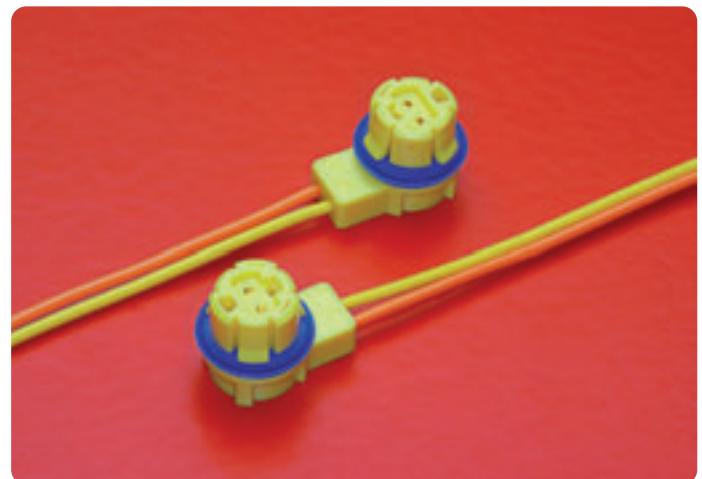
Squib 11 mm sealed Connectors

Features

- One piece terminal, selectively gold plated, 2 contact points
- Delivered in different wire lengths, wire gauges and types, please consult us for customization



IFW90



FUW90

Technical characteristics

Serviceability	Non Serviceable	Serviceable
Interface	UC	FCI
EMI filtering device	Ferrite	Coil
Locking type	Reversed Locking legs	Active CPA button
Sealing protection	IPx8	IP64K
Termination Technology	Crimp version	Crimp version
Contact resistance	< 10 mΩ	< 10 mΩ
Dielectric test	750V / DC	750V / DC
Temperature range	-40°C to +85°C	-40°C to +85°C
Pull out force	> 150 N	> 150 N

Main Part numbers

Right angle version		
Product Code	FUW 90-1	IFW 90-1 coding C
Part Numbers	61400500	PPI0000860

All our squibs are available in different wire lengths, wire gauges and types, please consult us for customization



Retainers

Features

- Retainer with integrated shorting clip (to be mounted into the Ø 11 mm initiator)
- Large outer bumps for improved retention
- Covered shorting clip for improved protection & mating safety
- Selectively gold-plated contact points
- Available in various colors



Retainers FCI interface



Retainers AK-2 interface



Retainers AK-1 interface

Technical characteristics

	FCI Interface	AK- 1 Interface
Temperature range	-40°C to +85°C	-40°C to +85°C
Shortcircuit resistance	100 mΩ max.	100 mΩ max.
Shorting clip material	Beryllium Copper	Beryllium Copper

Part numbers

Coding A	49001301	69003105
Coding B	49001311	69003117
Coding C	49001321	69003120

Codings are available in various colors, please check our website

Technical characteristics

	AK- 2 Interface
Temperature range	-40°C to +85°C
Shortcircuit resistance	100 mΩ max.
Shorting clip material	Stainless Steel

Part numbers

Coding I	69005103
Coding II	69005117
Coding III	69005120

Codings are available in various colors, please check our website



ABS/ESC Packages

Features

- High reliability active safety packages for harsh environment
- Pressfit terminals
- Supplied with or without coils
- Supports ABS (Antilock Braking System) and ESC (Electronic Control Stability) applications



26 ways ABS



46 ways ABS

Technical characteristics

Number of ways	26 ways	46 ways
Terminal size (in mm)	22x0.64+4x6.3	42x0.64+4x6.3
Sealing protection	Yes	Yes
Temperature range	-40°C to +120°C	-40°C to +120°C

Main Part numbers

	90231700	90231900
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High pin count, high density pin-headers CMC interface

32, 48, 64 & 112 ways

Features

- ▶ Number of ways: 32; 48, 64 & 112
- ▶ CMC (Connecteur Modulaire pour Calculateur) is one of the most popular interfaces for Engine Management Electronic Control Units
- ▶ Very compact size, high density connectors
- ▶ Sealed connector for Electronic Control Unit applications
- ▶ Suitable for harsh environment



32 ways



48 ways



64 ways



112 ways

Technical characteristics

Number of ways		32 ways	48 ways	64 ways	112 ways
Terminals	0.64 mm GTS-2	24	40	56	88
	1.5 mm GTS-2	8	8	8	24
Number of rows		4	4	4	4
Sealing protection		IP68	IP68	IP68	IP68
Temperature range		-40°C to +125°C	-40°C to +125°C	-40°C to +125°C	-40°C to +125°C
Male orientation to PCB		90°	90°	90°	90°

Main Part numbers

Pin headers	F670000	17464807	F932300	1746B207M
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Headers Powertrain - Sicma interface 6, 24, 56 & 90 ways

Features

- ▶ Headers for sealed applications in harsh environment
- ▶ Robust design with 1.5 mm signal terminals & 2.8 mm power terminals
- ▶ Proven field experience for more than 10 years



6 ways



24 ways



56 ways



90 ways

Technical characteristics

	6 ways	24 ways	56 ways	90 ways
Number of ways	6 ways	24 ways	56 ways	90 ways
Number of rows	1	3	2	3
Pitch between rows	-	5 mm	6 mm	6 mm
Terminals	1.5 mm Sicma	4	18	56
	2.8 mm Sicma	2	6	-
Sealing protection	IP68	IP68	IP68	IP68
Temperature range	-40°C to +105°C	-40°C to +125°C	-40°C to +125°C	-40°C to +125°C

Main Part numbers

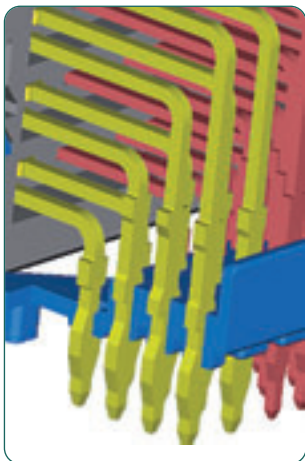
Straight male housings	-	HCCPHE24BKA00F	-	90162900
Right angled male housings	F159000	HCCPHE24BKA90F	F135200	PP10001336



Several technologies exist for interconnecting a pin header to a Printed Circuit Board. It consists of pressing a solder-free contact pin into a metalized PCB hole. FCI provides a solution customized for harsh environments that withstands the vibration and high temperatures, providing very controlled insertion force into the PCB with a minimum of hole drag and distortion, ensuring a stable interface to the PCB thanks to the FCI bow-tie male pin geometry.

Features

- Specifically developed for harsh environment automotive applications
- High mechanical retention
- Time saving & cost effective solution allowing full automation of the process
- Solder free environment friendly process
- Lead free process
- Particularly suitable for pin headers & ABS/ESC packages



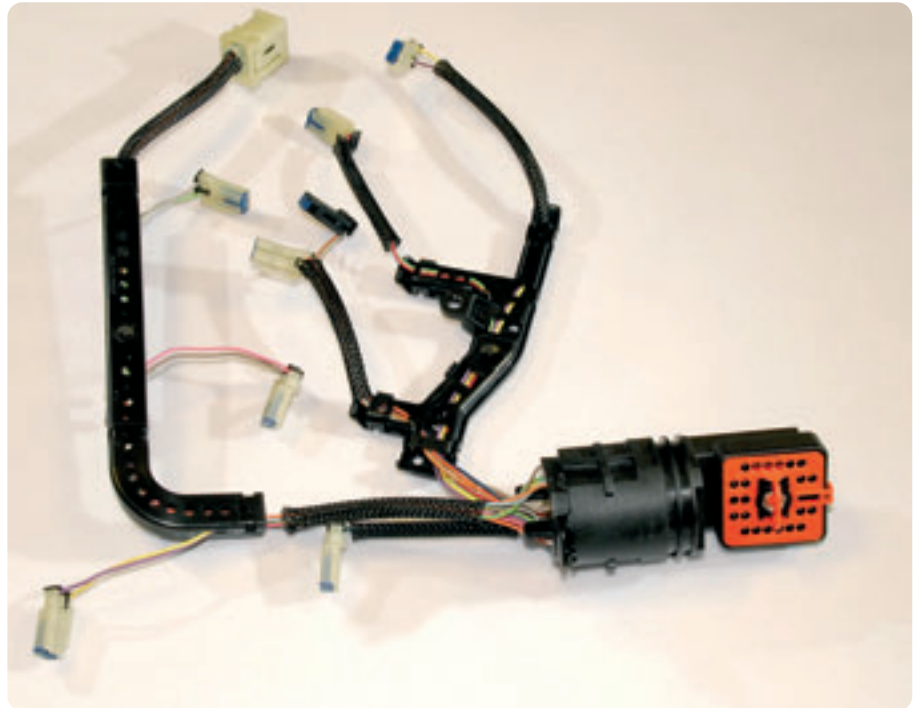
Press-fit geometry cross section (bow-tie)

The FCI bow-tie solution (and associated application tooling) has become increasingly popular with automotive manufacturers since it is more cost effective than wave soldering, allows full automation of the process and can reduce PCB costs. Besides its excellent performance (SMT process compatible and excellent component retention integrity), the quality of the attaching process can be improved because thermal shock to the PCB and risk of solder bridges are eliminated.

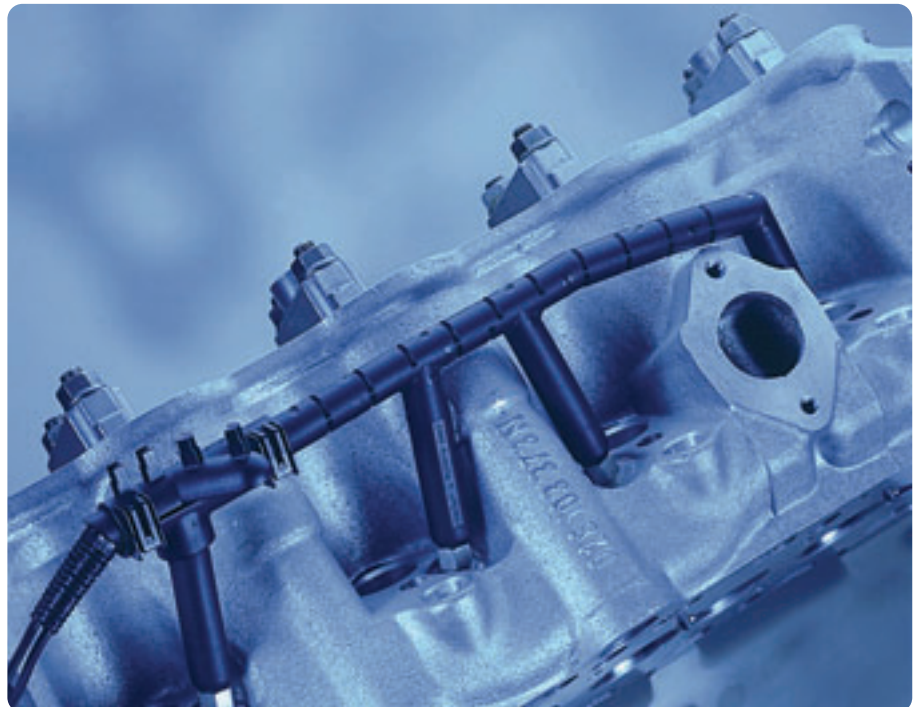
Powertrain applications

Features

- Proven field experience in Transmission with both discrete and flex wiring solutions
- Comprehensive range of bridge or single leads for glow plug cable assemblies
- Supported by FCI extended connector portfolio for sealed and harsh environment applications



Flex solution



Powertrain Glowplug



Harsh environment applications

Sensor cables



Wheel speed Sensors

- Cable and connector overmoulding know how
- Supported by a comprehensive range of OEM released sealed sensor connectors:



2 ways 0.64 mm USCAR



DCS SensoMate 2 ways



APEX® SensoMate



Sicma 6 ways sensor

Steering cable assemblies



Steering EPAS (Electrical Power Assistance Steering)

- Customized cable assembly solutions for Electrical Power Steering
- Supported by High Power Interconnect portfolio



DCS Power 2 ways



DCS 9.5 mm

Jumpers

Safety Restraint applications

Features

- Tailor-made jumper harnesses for pretensioner and all airbag applications as well as pedestrian protection
- Broadest squib interconnect portfolio in the market including MCC (Modular Connector Concept) leading multi-interface product family
- Belt-minder cable assemblies integrating switch or hall effect sensors
- Highly reliable termination technologies (2 step crimp and resistance welding)



Jumpers



Jumpers - Belt-minder



MCC (Modular Connector Concept) jumpers



Horn Harness Jumpers



Switch Hall effect



FCI offers a whole range of application tooling solutions from hand crimp tools, crimp presses to automated machines for harness preparation.

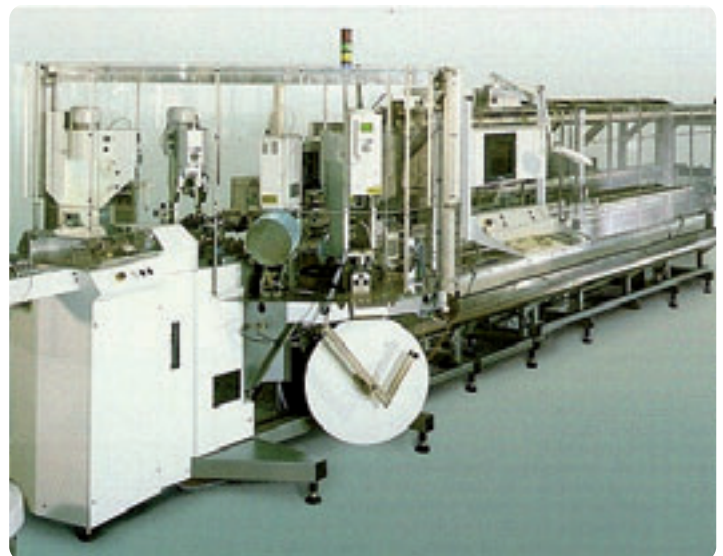
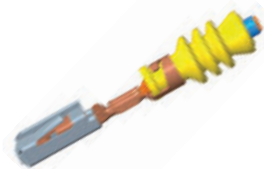
- Extraction / removal tools and polishing set for spare parts



- Crimp presses and crimp tools (Mini Applicators)

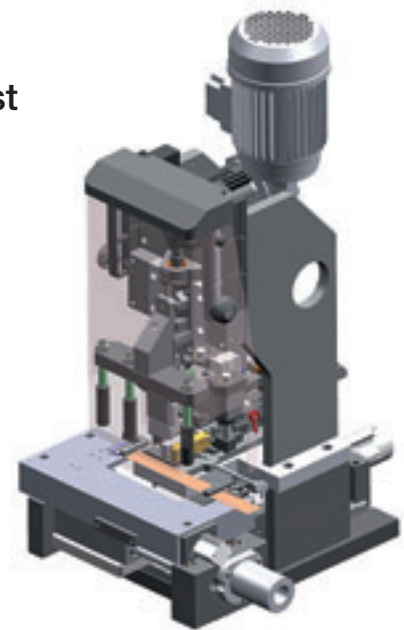
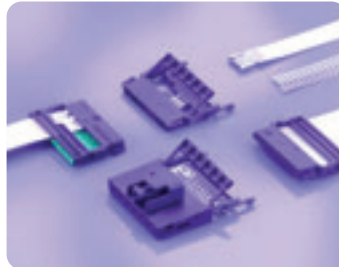


- Automated lead production machines



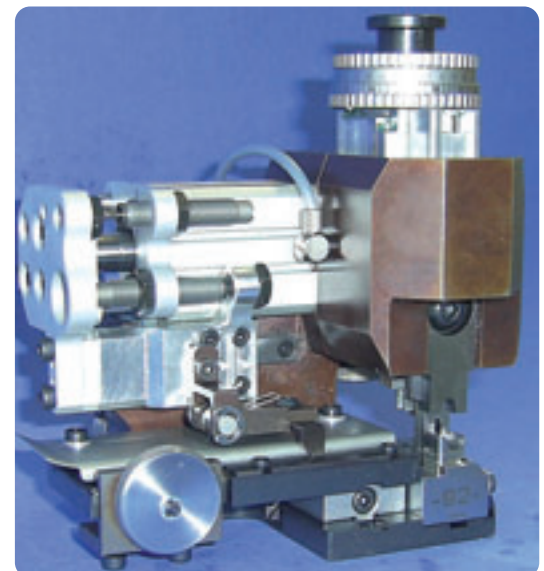
FCI can also customize machine upon customer request

■ Flex Cable automated machine

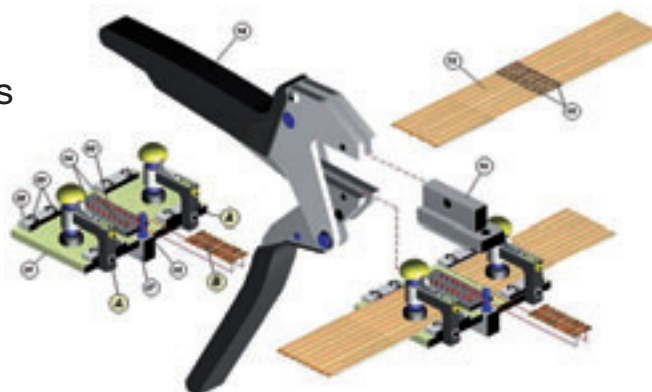


■ Crimp tool for 2-step crimp technology

2 step crimp technology significantly improves crimping reliability as it helps eliminating the “spring back effect” (due to relaxation phase of the wires after crimping) The “spring back effect” is the most important cause of resistance instability in a crimped connector.



■ Handcrimp special tools



FCI has developed a specific know how in application tooling trainings (terminals, crimping, etc) and can offer in depth analysis on crimping technology (crimping simulation, ...).

For more information on application tooling service, please consult your local sales office or send an e-mail to ApplicationTooling@fci.com.

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