MOTORIZED VEHICLES DIVISION

Connector solutions for EV* and HEV** applications

* Electric Vehicles
** Hybrid Electric Vehicles
The EV/HEV market represents a new segment with unique challenges for all those involved in the design and manufacture of EV/HEV vehicles. These vehicles bring with them a host of engineering challenges, including the development of a comprehensive range of automotive interconnect and charge plug solutions.

Uppermost among the challenges posed are operating voltages that range from 400V to 800V, with currents that range from 30A up to 300A or more. That requires protection against hazards occurring at such high power levels: electro-magnetic interferences as well as electrical arcing.

Moreover weight and cost savings do remain a focus: extending the EV’s mileage and the battery’s autonomy means that weight must be minimised in every single component.

Building on FCI’s in-depth expertise, the new POWERS³ high power connector and charge plug solutions are optimized for sealing, shielding, cost effectiveness, durability, compactness, ergonomics and people’s safety.

GROUND-BREAKING TERMINAL AND HOUSING DESIGN SOLUTIONS

Beside the electric motor and the battery, the architecture of electrical powered vehicles is composed of various electrical and electronic systems – such as an inverter, power junction box or charger and others – which are interconnected using dedicated high voltage connectors and cables.

MEETING THE CHALLENGE OF AN AUTOMOTIVE REVOLUTION

POWER S³ products are comprised of charge plug devices – for both slow and fast vehicle charging - and high voltage connectors, namely the APEX and RCS connector families.

The RCS800 terminals feature an 8 mm round pin design that facilitates more efficient use of space than an equivalent square terminal. RCS female terminals also provide a high number of contact points and can operate up to 250A, depending on customer specification.

In their respective range, RCS800 and RCS890 terminals (current up to 250A), APEX-950 (current up to 150A) and APEX-2.8mm terminals (current up to 35A) have higher current carrying capacity than any other terminals of the same sizes, thus allowing very high current performances while saving space and weight through a smaller size connector design. Depending on the system layout and available space constraints, two versions are now available: RCS800 for 180° exit and RCS890 for 90° version.

The RCS800, RCS890 and APEX280 housings developed for high power interconnections are equally innovative. The most ground-breaking aspects are a patented interlock device - ensuring power cut-off as soon as the connector is unmated - and a unique 2-step un-mating process providing enough time for this interlock to operate, so that no disconnection can occur when live. Indeed, two separate movements are required and there is a few seconds delay between the power being cut off and the connector being free for release. Additionally, FCI’s ErgoMate® axial mating system helps achieve a smaller size and a more user-friendly connection system, while also reducing mating forces. A Connector Position Assurance device (CPA) ensures 100% safe mating operations. Last but not least, high levels of shielding and sealing are employed to offer best-in-class interconnect solutions for EV and HEV.
FCI equips the Formulec EF01 world’s fastest electric racing car

The car delivers astonishing performances accelerating from 0 to 100 kph in less than 3 seconds and pursues an objective of 250 kph top speed.

To transmit power from the battery to the electric engine, the car’s interconnection system relies on RCS800 hi-performance connectors.

With the Best Interconnection System
The collaborative approach to interconnect and charge plug development

FCI has a long-established track record of designing and manufacturing customized solutions in partnership with major OEMs and system suppliers. This is particularly significant for the EV/HEV market where the standards are still being established.

For instance, charge plug devices are being defined within the IEC-62196-2 specification, but there are three types of plug interfaces described in this international standard and still some vigorous debates across countries and regions about using ‘Type-1’ – also released by the SAE-J1772 standardization committee - versus Type-2 on the vehicle side. Similarly the other end of the charging cable, for either home ‘wall box’ or public charging station, will have to be harmonized. Indeed, some countries or industrial groups do promote ‘Type-2’ whereas others are strongly positioned to implement ‘Type-3’ interface whose main difference with ‘Type-2’ is the presence of plastic shutters in the terminal cavity, for protection against accidental contact with live parts.

Similarly, interconnect product designs vary widely across OEMs and regions. Among the various design features creating this diversity, shielding technology is probably the most significant. Typically, Japanese OEMs implement a peripheral shielding of the connector whereas German OEMs – under the AK committee’s leadership – prefer individual cable shielding with shielding braid located inside the sealing areas. Both concepts result in very different connector designs as the shielding function has an impact on the sealing technique to be used for instance and other critical connector components.

Thus, in a context of high R&D efforts to launch profitable EV or HEV programs, at consumer’s price expectations, the market will remain characterised by the emergence of OEMs technical clusters but still the need of custom developments for each of them. Therefore, FCI is willing to work in partnership with customers to create commercially viable, tailor-made solutions.

The EV-PLUG-16/32A slow charging devices uses high performance ring terminals inserted in connector housings which are interface compatible with international standards IEC-62196-2-1 and SAE-J1772 so called ‘Type-1’. But FCI still finds a way to innovate through a unique sealed area that protects the locking area against freezing conditions and special channels that allow fluids and dust to drain away.

FCI’s expertise is also demonstrated in the EVPLUG-16/63A, designed to fulfil both slow and fast charging requirements and compliant with IEC-62196-2-2 so called ‘Type-2’, the second international standard being used so far for vehicle electrical charging devices. It employs the same ring terminal technology as the EV-PLUG-16/32A.

With the launch of P3 the family, FCI is establishing itself as a global leader, offering a range of production-ready and cost-effective solutions for the EV/HEV market.
FCI PRODUCT OFFERING FOR HIGH END INTERCONNECTION AND HIGH POWER SOLUTIONS

- Lighting
- Passive Safety Restraints
- Convenience & Multimedia
- Modules (doors, seats)

**EV***/PHEV** Charge Plugs

High Power Interconnect

Power RCS 800 terminals

Signal terminal Systems

Sensors, Injectors & actuators

Active safety (ABS-ESP)

* EV: Electric Vehicle
** PHEV: Plug-in Hybrid Electric Vehicle
**Features & benefits**

**Electrical features**
- High voltage 400-750 V
- Max. current carrying capacity 35 A at 70°C with 4mm² wire section

**Shielding performances**
- EMI/RFI 56 dB Shielding protection at 100 MHz

**Terminal system**
- APEX 2.8mm 2-piece high performance
- APEX 2.8 terminal system

**Mechanical features**
- FCI ErgoMate® Axial Mating Assist System on female connector
  - Easy handling
  - Reduced mating forces
  - 2-step disconnection feature for safe unmating

**Environmental features**
- Dual sealing feature when mated:
  - External: IPx9K, IP67, 1000 mbars under air pressure
  - Internal: individual cavity sealing with SWS* IP2X B electrical shock protection

**Physical features**
- Plastic parts: PBT
- Shielding plates: Copper Alloy Tin-plated

**Typical applications**
- High voltage DC connections like air conditioning, heating systems and others
- Charge plug in-car interconnection

* SWS Single Wire Seal

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**Technical characteristics**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage</td>
<td>400 - 750 V</td>
</tr>
<tr>
<td>Max. current carrying capacity</td>
<td>35 A at 70°C</td>
</tr>
<tr>
<td>Sealing protection</td>
<td>IP67 &amp; IPx9K</td>
</tr>
<tr>
<td>Electrical shock protection</td>
<td>IP2XB</td>
</tr>
<tr>
<td>Temperature range</td>
<td>-40°C to +125°C</td>
</tr>
<tr>
<td>Terminal insertion force</td>
<td>APEX280</td>
</tr>
<tr>
<td>DCS-2 1.5mm (Interlock)</td>
<td>20 N max.</td>
</tr>
<tr>
<td>Terminal retention force</td>
<td>APEX280</td>
</tr>
<tr>
<td>DCS-2 1.5mm (Interlock)</td>
<td>12 N max.</td>
</tr>
<tr>
<td>Connector mating force</td>
<td>&lt; 60 N</td>
</tr>
<tr>
<td>Shielding performance</td>
<td>at 100 MHz</td>
</tr>
<tr>
<td>Shielding performance</td>
<td>56 dB</td>
</tr>
</tbody>
</table>

**Part Numbers : Code1**

<table>
<thead>
<tr>
<th>Gender</th>
<th>Housing P/N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female/Plug (black slider)</td>
<td>F083110</td>
</tr>
<tr>
<td>Male/Header</td>
<td>F873110</td>
</tr>
</tbody>
</table>

**Part Numbers : Code2**

<table>
<thead>
<tr>
<th>Gender</th>
<th>Housing P/N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female/Plug (brown slider)</td>
<td>F183110</td>
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<tr>
<td>Male/Header</td>
<td>F973110</td>
</tr>
</tbody>
</table>

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**Dimensions in mm**

- Female plug (code 1)
- Male header (code 1)
- Header interface (code 1)
APEX® 2.8mm TERMINALS

Features

- High current carrying capacity
- 2-piece APEX® terminal technology
- Lanceless terminal
- High normal force - low insertion force contacts
- Tin plating
- Single wire seal version

Technical characteristics

<table>
<thead>
<tr>
<th>Blade range</th>
<th>2.8 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact resistance</td>
<td>&lt; 2 mΩ</td>
</tr>
<tr>
<td>Contact mating force</td>
<td>&lt; 7 N</td>
</tr>
<tr>
<td>Contact unmating force</td>
<td>&lt; 5 N</td>
</tr>
<tr>
<td>Maximum current carrying capacity*</td>
<td>at 70°C, 35 A</td>
</tr>
</tbody>
</table>

*with 4 mm² wire section

Part Numbers for APEX 280 connectors

<table>
<thead>
<tr>
<th>Type of terminal</th>
<th>Terminal P/ N</th>
<th>Single Wire Seal P/ N</th>
<th>Cable wire section</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female terminals SWS*, Tin plated</td>
<td>54001404</td>
<td>C012400</td>
<td>2.5 mm² (AWG 10)</td>
</tr>
<tr>
<td>Female terminals SWS*, Tin plated</td>
<td>54001202</td>
<td>C302400</td>
<td>4 mm² (AWG 12)</td>
</tr>
<tr>
<td>Male terminals SWS*, Tin plated</td>
<td>F808800</td>
<td>C012400</td>
<td>2.5 mm² (AWG 10)</td>
</tr>
<tr>
<td>Male terminals SWS*, Tin plated</td>
<td>54001027</td>
<td>C302400</td>
<td>4 mm² (AWG 12)</td>
</tr>
<tr>
<td>DCS-2 1.5 mm male</td>
<td>60100734</td>
<td>60993913</td>
<td>0.5 mm²</td>
</tr>
<tr>
<td>Interlock, Gold plated</td>
<td>60100734</td>
<td>60993928</td>
<td>&gt; 0.5-1.00 mm²</td>
</tr>
</tbody>
</table>

* SWS Single Wire Seal
**Features & benefits**

**Electrical features**
- High voltage: 400-750 V
- High current carrying capacity: 230 A at 70°C with 50 mm² wire section

**Shielding performances**
- EMI/RFI 60 dB Shielding protection at 100 MHz

**Mechanical features**
- FCI ErgoMate® Axial Mating Assist System on female connector
- Easy handling
- Reduced mating forces
- 2-step disconnection feature for safe unmating
- Unique integrated electric interlock
- CPA (Connector Position Assurance)

**Terminal system**
- New RCS800 compact 8mm round terminals complying to high electrical performances

**Environmental features**
- Dual sealing feature when mated:
  - External: IPx9K, IP67, 1000 mbars under air pressure
  - Internal: individual cavity sealing with SWS*
- IP2X B electrical shock protection

**Physical features**
- Plastic parts: PBT
- Shielding plates: Copper Alloy Tin-plated

**Typical applications**
- High voltage DC connections for batteries, junction boxes, inverters, Power Electronic Boxes (PEB) and others

* SWS Single Wire Seal

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## Technical characteristics

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
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<tbody>
<tr>
<td>Voltage</td>
<td>400 - 750 V</td>
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<tr>
<td>Max. current carrying capacity</td>
<td>185 A at 70°C</td>
</tr>
<tr>
<td>Wire section 35 mm²</td>
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</tr>
<tr>
<td>Wire section 50 mm²</td>
<td>230 A at 70°C</td>
</tr>
<tr>
<td>Sealing protection</td>
<td>IP67 &amp; IPx9K</td>
</tr>
<tr>
<td>Electrical shock protection</td>
<td>IP2XB</td>
</tr>
<tr>
<td>Temperature range</td>
<td>-40°C to + 125 °C</td>
</tr>
<tr>
<td>Terminal insertion force</td>
<td>RCS800</td>
</tr>
<tr>
<td>DCS-2 1.5 mm (Interlock)</td>
<td>30 N max.</td>
</tr>
<tr>
<td>Terminal retention force</td>
<td>RCS800</td>
</tr>
<tr>
<td>DCS-2 1.5 mm (Interlock)</td>
<td>120 N min.</td>
</tr>
<tr>
<td>Connector mating force</td>
<td>&lt; 60 N</td>
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<tr>
<td>Shielding performance at 100 MHz</td>
<td>60 dB</td>
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**Part Numbers : Code1**

<table>
<thead>
<tr>
<th>Gender</th>
<th>Housing P/N</th>
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<tr>
<td>Female/Plug (black slider)</td>
<td>F673110</td>
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<td>Male/Header</td>
<td>F473110</td>
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**Part Numbers : Code2**

<table>
<thead>
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</thead>
<tbody>
<tr>
<td>Female/Plug (brown slider)</td>
<td>F773110</td>
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<tr>
<td>Male/Header</td>
<td>F573110</td>
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</tbody>
</table>

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**Dimensions en mm**

[Diagram of dimensions]

**Header layout (code 1)**

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For other requirements, please consult [www.fci.com/powers3](http://www.fci.com/powers3)
RCS800 TERMINALS
Round Connection System (RCS) - High current/high voltage (400/750 V) applications

Features

Female terminal
- 8 contact blades
- 2-piece female terminal
- Single wire seal
- Copper alloy with Silver plating
- Tin plating

Male terminal
- 8.0 mm round terminal
- Several male terminal lengths available for bus bar connection
- Plastic cap for IP2X B protection
- Integrated O-ring sealing
- M6 integrated threaded insert
- Copper alloy with Silver plating

Performance characteristics

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Contact resistance</td>
<td>&lt; 0.1 mΩ</td>
</tr>
<tr>
<td>Contact mating force</td>
<td>&lt; 30 N</td>
</tr>
<tr>
<td>Contact unmating force</td>
<td>&lt; 20 N</td>
</tr>
<tr>
<td>Max. current carrying capacity at 70°C*</td>
<td>230 A</td>
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</table>

Part Numbers for Female Connectors

<table>
<thead>
<tr>
<th>Type of terminal</th>
<th>Terminal P/ N</th>
<th>Single Wire Seal P/N</th>
<th>Cable wire section</th>
<th>Seal retainer</th>
</tr>
</thead>
<tbody>
<tr>
<td>RCS800 female</td>
<td>F385400</td>
<td>F327600</td>
<td>50 mm²</td>
<td>F527600</td>
</tr>
<tr>
<td>RCS800 female</td>
<td>F427600</td>
<td></td>
<td>35 mm²</td>
<td></td>
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</table>

Part Numbers for Male Connectors

<table>
<thead>
<tr>
<th>Type of terminal</th>
<th>Terminal P/ N</th>
<th>Single Wire Seal P/N</th>
<th>Cable wire section</th>
<th>Length L</th>
</tr>
</thead>
<tbody>
<tr>
<td>RCS800 male</td>
<td>F076600</td>
<td>-</td>
<td>-</td>
<td>24.8 mm</td>
</tr>
<tr>
<td>RCS800 male</td>
<td>F176600</td>
<td>-</td>
<td>-</td>
<td>46.8 mm</td>
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<td>RCS800 male</td>
<td>F276600</td>
<td>-</td>
<td>-</td>
<td>70.8 mm</td>
</tr>
<tr>
<td>DCS-2 1.5 mm male</td>
<td>60100714</td>
<td>60993913</td>
<td>&gt; 0.22-0.35 mm²</td>
<td>-</td>
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<tr>
<td></td>
<td>60100734</td>
<td>60993913</td>
<td>0.5 mm²</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>60100734</td>
<td>60993928</td>
<td>&gt; 0.5-1.00 mm²</td>
<td>-</td>
</tr>
</tbody>
</table>

For other requirements, please consult www.fci.com/powers3
HIGH POWER CHARGE PLUG DEVICE

EV-PLUG-16/32A - Type-1
Charge plug device - Electric & Plug-in Hybrid Vehicles

Features & benefits

Interface
- 5 way interface: 3 power + 2 signal terminals
- Interface design according to SAE-J1772 and IEC62196-2-1 standards
- Female terminals on charge connector, Male terminals on vehicle inlet

Electrical features
16 A - 32 A / 110V - 250V
- Single-phase Power Supply
- Maximum charge performance: 7.4 kW (32 A)
- Power cables: 2.5 mm² (16 A) or 4 mm² (32 A)
- Signal cables: 0.75 mm²

Environmental features
- Ambient temperature – 40°C + 85°C
- IP67 sealing (connector/inlet mated & inlet flap closed)
- Inlet flap protection
- Salt spray protection
- Efficient fluids and dust draining feature

Mechanical features
- Unique full interface design allowing freezing protection
- Upper plate on vehicle inlet for possible locking mechanism integration

Overheating protection
- Integrated thermal circuit breaker on inlet connector to prevent against abnormal temperature increase

Terminal system
- Power terminal: 3.6 mm round crimped terminals
- Signal terminals: 1.5 and 2.8 mm round crimped terminals
- Material: Copper with Nickel plating
- Terminals design tailored for high mating cycles performance exceeding 10.000 cycles

Physical features
- Plastic parts: PA6 - T3 class temperature (125°C)

Delivery state:
- Charge connectors and inlets are pre assembled, controlled and can be delivered with cables

Technical characteristics

<table>
<thead>
<tr>
<th>Voltage</th>
<th>up to 250V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. current carrying capacity</td>
<td>Wire section 2.5 mm²</td>
</tr>
<tr>
<td></td>
<td>Wire section 4.0 mm²</td>
</tr>
<tr>
<td>Sealing protection*</td>
<td>IP 67</td>
</tr>
<tr>
<td>Temperature range</td>
<td>-40°C to + 85°C</td>
</tr>
<tr>
<td>Plug mating force</td>
<td>&lt; 80 N</td>
</tr>
<tr>
<td>Number of mating cycles</td>
<td>&gt; 10.000</td>
</tr>
</tbody>
</table>

*Connector/inlet mated and inlet cap closed

Part Numbers

<table>
<thead>
<tr>
<th>Description</th>
<th>P/N</th>
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<tbody>
<tr>
<td>Female connector 16A - 6.5 m cable</td>
<td>F604110</td>
</tr>
<tr>
<td>Male inlet 16A - Cap (Right opening) with upper plate - 2.0 m cable</td>
<td>F514110</td>
</tr>
<tr>
<td>Male inlet 16A - Cap (Left opening) with upper plate - 2.0 m cable</td>
<td>F614110</td>
</tr>
<tr>
<td>Male inlet 16A - Cap (Right opening) without upper plate - 2.0 m cable</td>
<td>F714110</td>
</tr>
</tbody>
</table>

For other requirements, please consult www.fci.com/powers3
HIGH POWER CHARGE PLUG DEVICE

EV-PLUG-16/32A - Type-1
Charge plug device - Electric & Plug-in Hybrid Vehicles

Connector front view or inlet rear view

N°1 (Main)
N°2 (Neutral)
N°3 (Ground)
N°4 (Control pilot)
N°5 (Connection switch)

Male inlet-Upper plate version
Male inlet without upper plate

Male inlet front view
Male Inlet side view
Male inlet front view
Male inlet side view

Female connector front view
Features & benefits

Interface
- 7 way interface: 5 power + 2 signal terminals
- Interface design according to IEC62196-2-2 standards
- "Vehicle side" Female terminals on charge connector, Male terminals on vehicle inlet

Electrical features
16 A - 63 A / 230V - 400V
- Single-phase or three-phase Power Supply
- Maximum charge performance: 43.5 kW (63 A/three phase)
- Power cables: 2.5 mm² (16 A) or 4 mm² (32 A) or 16 mm² (63A)
- Signal cables: 0.75 mm²

Environmental features
- Ambient temperature – 40°C + 85°C
- IP67 sealing (connector/inlet mated & inlet flap closed)
- Inlet flap protection
- Salt spray protection
- Efficient fluids and dust draining feature

Mechanical features
- Bearing holes for locking finger and detection

Overheating protection
- Integrated thermal circuit breakers on inlet connector to prevent against abnormal temperature increase

Terminal system
- Power terminal: 6 mm round crimped terminals
- Signal terminals: 3 mm round crimped terminals
- Material: Copper with Nickel plating
- Terminals design tailored for high mating cycles performance exceeding 10,000 cycles

Physical features
- Plastic parts: PA6 - T3 class temperature (125°C)

Delivery state:
- Charge connectors and inlets are pre assembled, controlled and can be delivered with cables

Technical characteristics

<table>
<thead>
<tr>
<th>Voltage</th>
<th>up to 400V</th>
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<tbody>
<tr>
<td>Max. current carrying capacity</td>
<td></td>
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<tr>
<td>Wire section 2.5 mm²</td>
<td>16 A</td>
</tr>
<tr>
<td>Wire section 4.0 mm²</td>
<td>32 A</td>
</tr>
<tr>
<td>Wire section 16 mm²</td>
<td>63 A three phase / 70 A single phase</td>
</tr>
</tbody>
</table>

Sealing protection*  
IP 67

Temperature range  
-40°C to + 85 °C

Connector mating force  
< 80 N

Number of mating cycles  
> 10,000

*Connector/inlet mated and inlet cap closed

Availability
New product in development. Shall you need more information, please consult your local FCI representative.
EV-PLUG-16/63A - Type-2
Charge plug device - Electric & Plug-in Hybrid Vehicles

Connector front view or inlet rear view
Plug view or outlet rear view
Male inlet
Female connector
NEW DEVELOPMENTS

APEX-950 HIGH POWER TERMINALS AND CONNECTORS

- **Male and Female terminals**
  - Pin dimension: 9.5mm x 1.2mm
  - Male terminal: rectangular blade
  - Female terminal: APEX 2-pieces design
  - Crimping capabilities: 16 mm² to 25 mm²
  - Very high current capability: 125A at 70°C (25mm² cable, silver plating)
  - High mechanical strength: robust bend strength
  - Operating temperature: -40°C to +150°C (Silver plating)
  - Material: Copper alloys
  - Plating options: Tin (Sn), Silver (Ag)
  - Contact resistance: < 0.5mΩ

- **Connector Product family**
  - Unshielded 4+1-way connector with ErgoMate slider and 2-step un-mating device for easy handling and reduced mating force
  - Other shielded housings are possible for high voltage applications

- **Typical applications**:
  - in-car charger 3-phase interconnection for 4+1-way unshielded connectors
  - battery, inverter (or PEB**), electric motor, junction box for shielded connectors

RCS-890 HIGH POWER TERMINALS AND CONNECTORS

- **Male and Female terminals**
  - Male terminal: RCS-800 round terminal 8mm diameter
  - Female terminal: Protective plastic cage + Body in Copper alloy with 8 contact blades
  - Crimping capabilities: 35 mm² to 50 mm²
  - Very high current capability: 230A at 70°C (50mm² cable)
  - High mechanical strength: robust bend strength
  - Operating temperature: -40°C to +150°C (silver plating)
  - Material: Copper alloy
  - Plating: Silver (Ag)
  - Contact resistance: < 0.1mΩ

- **Connector product family**
  - Shielded right-angled connectors (90°): 1-way
  - High voltage 400V - 750V
  - Slider mating device for easy handling and reduced mating force
  - Unique integrated interlock and CPA* devices for safe mating and un-mating

- **Typical applications**: battery, inverter (or PEB**), electric motor, junction box

(*) CPA: Connector Position Assurance
(**) PEB: Power Electronics Box
<table>
<thead>
<tr>
<th>Description</th>
<th>RCS800 Tool</th>
<th>Part Number for RCS800</th>
<th>APEX280 Tool</th>
<th>Part Number for APEX280</th>
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</thead>
<tbody>
<tr>
<td>Extraction tool for female terminal</td>
<td><img src="image1" alt="Image" /></td>
<td>F226010</td>
<td></td>
<td>F911110</td>
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<tr>
<td>Extraction tool for male terminal</td>
<td><img src="image2" alt="Image" /></td>
<td>F218500</td>
<td></td>
<td>F689500</td>
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<tr>
<td>DCS-2 1.5mm removing tool for male terminal</td>
<td><img src="image3" alt="Image" /></td>
<td>F418500</td>
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<td>F858400</td>
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<tr>
<td>Connector SWS* positioning tool</td>
<td><img src="image4" alt="Image" /></td>
<td>F214600</td>
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<tr>
<td>Optional tool SWS* mounting tool on cable (to be used if the SWS* is mounted on the cable after terminal crimping)</td>
<td><img src="image5" alt="Image" /></td>
<td>F979500</td>
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</tr>
<tr>
<td>DCS-2 1.5mm hand crimp tool (0.22 - 0.35 mm²)</td>
<td>65200413-M</td>
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<td>65200413-M</td>
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<tr>
<td>DCS-2 1.5mm hand crimp tool (0.5 - 1 mm²)</td>
<td>65200414-M</td>
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<td>APEX 2.8mm hand crimp tool (4mm² with SWS*)</td>
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<td>65201099-M</td>
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<tr>
<td>Crimping tool (RCS800 female terminal)</td>
<td><img src="image6" alt="Image" /></td>
<td>Please consult your local FCI representative for a customized proposal</td>
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<tr>
<td>Crimping press (RCS800 female terminal)</td>
<td><img src="image7" alt="Image" /></td>
<td>Please consult your local FCI representative for a customized proposal</td>
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<tr>
<td>Manual crimping press (10-100 mm²)</td>
<td><img src="image8" alt="Image" /></td>
<td>FCIC10</td>
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<tr>
<td>Crimp spare parts set for manual crimping press FCIC10</td>
<td><img src="image9" alt="Image" /></td>
<td>CR10 (10 mm²)</td>
<td>CR16 (16 mm²)</td>
<td>CR25 (25 mm²)</td>
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<td></td>
<td></td>
<td>CR35 (35 mm²)</td>
<td>CR50 (50 mm²)</td>
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</tr>
</tbody>
</table>

* SWS Single Wire Seal
FCI to make a remarkable contribution to the new generation of low emission vehicles

The fast developing EV and HEV market is set to generate a wide array of novel and challenging high voltage connector applications. Different vehicle manufacturers are pursuing different routes towards the goal of low or zero emissions and in doing so will place new demands on connector suppliers. Characteristics common to them all are likely to include the need for exceptional levels of safety and personal protection, combined with an on-going drive to reduce costs, as well as weight and space requirements. At the same time, manufacturers cannot afford to compromise the high standards of reliability and durability expected by modern consumers. Given these wide-ranging challenges, FCI’s POWER-S® product range offers unique and price competitive innovations for high power interconnect and charge plug devices. In addition, through a strong commitment to research and development and a collaborative approach with car makers and system suppliers, FCI is set to play a remarkable contribution to the new generation of low emission vehicles.

For more information about POWER-S®, visit www.fci.com/powers3

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