Current Collector Devices (CCD)

CCD FOR TRAMWAY WIRELESS

Tramway technology is being more and more used in the development of urban mass transportation projects. The regular Tramway technology uses an energy collection based on a pantograph and catenary but it also exists an energy collection which doesn’t need catenary, the wireless technology.

The two technologies enables a current collection from the floor in a dynamic or a static way.

There are numerous advantages of these technologies:
- For aesthetic when Tramway is next to classified buildings or monuments or historical city centers. The wireless technology will not disfigure the visual environment.
- For the security of the firefighters, while intervention next to the catenary grid or for the safety of the people doing the maintenance on roads for public lightning
- to enable extra-large dimensions for road transports.

Mersen innovate and is the first company to propose two different Current Collector technologies wireless (static and dynamic).

The dynamic Sliding technology is a Current Collector made of a sliding shoe equipped with an antenna to power the energy rail just under the tramway.

During the whole course of the Tramway, the shoe is collecting the energy from a central rail powered under 750VDC and divided into portions of 8 meters. This third rail is energized, by an antenna fixed on-board, only when the Tramway is above it, for security reasons.

FEATURES & BENEFITS
• Visual aesthetic, no more catenary
• Proven technology since 10 years with more than 200 trains running every day
• CCD’s dimensions and characteristics can be customized to your application
• Minimum weight, especially low dynamic mass
• Low noise level
• Extremely compact
• Cost effective, proven technologies and simple fixing
• Low cost maintenance

APPLICATIONS
• Wireless applications for Tramways

STANDARDS
• IEC 61373
Sliding contact

Since 2003, 200 trains are using these proven technologies in the world and it is still developing.

References
Bordeaux (FR), Dubai (AE), Lusail (AE), Orleans (FR), Reims (FR), Tours (FR), Cuenca (ES), Rio (BR), ...

TECHNICAL DATA OVERVIEW

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage DC</td>
<td>750 VDC</td>
</tr>
<tr>
<td>Amper (A)</td>
<td>800 A</td>
</tr>
<tr>
<td>Speed/Characteristic</td>
<td>90 km/h</td>
</tr>
<tr>
<td>Working Temperature</td>
<td>-40°C / +25°C</td>
</tr>
<tr>
<td>Pressure of the Shoe</td>
<td>120N ±20%</td>
</tr>
<tr>
<td>Humidity</td>
<td>90%</td>
</tr>
</tbody>
</table>

DIMENSIONS

Sliding contact Current Collector Device
Dwg 118382

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FUNCTIONS

Retraction position indication
To inform the driver of the retracted position of the CCD, Mersen integrates a micro-switch to relay the information of the position. This microswitch is compatible with all traction battery voltage supply (12, 24, 48 and 110VDC).

Shoe material
Mersen can propose different Shoe materials - Copper; Graphite; Cast iron; Steel; Cupro Alu adapted to your third rail. Once they are worn, it is very easy to change them for new ones supplied by Mersen.

Spare part kits
Mersen will supply you with all the Spare parts kits to increase the life time and guarantee a reliable service of your current collector devices.
- cables,
- fuses,
- replacement shoes and arms,
- hardware,
- and all necessary components

Training and technical support
Mersen team can help you for training your Maintenance team and for commissioning your new installations all around the world.
FUNCTIONS

**Tooling**
Beside the spare parts, Mersen can supply the necessary tooling to set perfectly your CCD to the technical requirements of your grid and optimize their use.

High, Low and nominal position can be set also the tools include a pressure measurement system to check the pressure of the CCD on the 3rd rail. This tool is mandatory to succeed in the great overhaul to guarantee a reliable service and a longer life time of your CCD fleet.

Tooling reference: 137463

**LCC; RAMS; Type tests**
All around the world, Mersen technical team can help you for technical support and can offer you customized training sessions for your Maintenance team.

ACCESSORIES

**Brushes**

<table>
<thead>
<tr>
<th>Catalog number</th>
<th>Package</th>
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<tbody>
<tr>
<td>Graphite Shoe</td>
<td>1 piece</td>
</tr>
<tr>
<td>Cupro Alu shoe</td>
<td>1 piece</td>
</tr>
<tr>
<td>Cast Iron Shoe</td>
<td>1 piece</td>
</tr>
<tr>
<td>Copper shoe</td>
<td>1 piece</td>
</tr>
<tr>
<td>Steel shoe</td>
<td>1 piece</td>
</tr>
</tbody>
</table>

**Traction fuses**

<table>
<thead>
<tr>
<th>Catalog number</th>
<th>Item number</th>
<th>Package</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>CC 7.5 GRC 123 TTF 0500</td>
<td>D090439A</td>
<td>1 piece</td>
<td>2 kg</td>
</tr>
<tr>
<td>CC 7.5 GRC 123 TTF 0600</td>
<td>H239207A</td>
<td>1 piece</td>
<td>2.2 kg</td>
</tr>
<tr>
<td>CC 7.5 GRC 123 TTF 0700</td>
<td>N1013714A</td>
<td>1 piece</td>
<td>2.3 kg</td>
</tr>
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<td>2.3 kg</td>
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<tr>
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</tr>
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<td>MICROSWITCH HOLDER SIZE 12</td>
<td>Q1049941A</td>
<td>1 piece</td>
<td>0.15 kg</td>
</tr>
</tbody>
</table>

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