CBTC
(Communication Based Train Control)

The CBTC system of Mitsubishi Electric is the foundation of safe and stable transportation, and it also achieves advanced train operation and control.

- **On-board Network**
  - On-Board Controller & Automatic Train Operation
  - On-board Radio Unit

- **Radio Communication Network**
  - Wayside Radio Unit

- **Wayside Network**
  - Wayside Zone Controller
  - Solid State Interlocking
  - Vial unit for wayside

- **Operation Control Center**

**Achievement of Efficient Train Traffic**
High-density train operation via moving block section control

**Reduction of Wayside Equipment**
Cost reduction by reducing wayside signals and other equipment

**Adoption of ISM Band Radio Communication**
Easy to install by adopting 2.4 GHz band radio, which does not require a radio license
CBTC (Communication Based Train Control)

Features

1. Energy Saving
Mitsubishi Electric’s economy-driving ATO effectively reduces energy consumption by 18% without changing running time between stations.

2. Highly-Reliable Wireless Transmission
Mitsubishi Electric’s CBTC radio system with advanced wireless transmission technologies guarantees highly available train-wayside communication for urban areas.

※2 Compatible with high-speed trains at up to 160km/h

3. System Safety
The On-Board Controller and Wayside Zone Controller were certified as SIL4 by TÜV-SÜD (Germany) in 2014.

※3 SIL: Safety Integrity Level compliant with EN50126, EN50128, EN50129 and EN50159

Power Equipment Specifications

<table>
<thead>
<tr>
<th>Product</th>
<th>On-Board Controller</th>
<th>Wayside Zone Controller / Solid State Interlocking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power source</td>
<td>110V DC</td>
<td>24V DC</td>
</tr>
<tr>
<td>Dimension</td>
<td>W442mm x D220mm x H132.5mm</td>
<td>W432mm x D267mm x H265.4mm</td>
</tr>
<tr>
<td>Installation position</td>
<td>On-board</td>
<td>Relay room</td>
</tr>
</tbody>
</table>

Environment

<table>
<thead>
<tr>
<th>Product</th>
<th>On-Board Controller</th>
<th>Wayside Zone Controller / Solid State Interlocking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature range</td>
<td>-25 to +55 °C</td>
<td>0 to +45 °C</td>
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<tr>
<td>Dielectric strength</td>
<td>1200V AC (per minute)</td>
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</tr>
<tr>
<td>Electromagnetic</td>
<td>EN50121-4</td>
<td>EN50121-3-2</td>
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<tr>
<td>compatibility</td>
<td>IEC / EN 61373</td>
<td>-</td>
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</table>

MITSUBISHI ELECTRIC CORPORATION

www.MitsubishiElectric.com

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