Rail Product Selection Guide
Proven rail expertise.
Global capabilities.
We Connect
When it matters most.

TRAIN CONTROL
ITT Veam and Cannon connectors support today’s advanced train control systems, which include a wide range of on-board systems, for both PCB and cable applications.
PRODUCT SOLUTIONS:
FRCIR Standard, CA Bayonet, Trident

SENSORS
ITT Veam connectors are optimized for the very harsh environments of sensor applications, delivering minimized footprints, optimal sealing and extended lifetimes.
PRODUCT SOLUTIONS:
FRCIR Standard, FRMGCIR, VBN, FRMGCIR Stainless Steel, VA900

UNDER CAR
ITT Veam connectors support critical signal, power and data communications under train cars, with reliable vibration resistant connectivity enabled by compact solutions suitable for high-density wiring environments.
PRODUCT SOLUTIONS:
FRCIR Standard, FRCIR290, CIRM12, VBN, Power Plates, Junction Boxes, FRCIR Stainless Steel, VA900

BOGIES
ITT Veam high power single & multi-pole standard and customized connectors deliver both extreme vibration resistance and space saving footprints to ensure reliable power supply and signal transmission to traction systems.
PRODUCT SOLUTIONS:
FRCIR Standard, FRCIR290, FRMGCIR, FRCIR Stainless Steel, FRCIR Marine Bronze, Power Plates, VA900

INTERVEHICLE
ITT Veam solutions including connectors, junction boxes and jumper cables support critical signal, power and data communication between train cars, by delivering ultra-reliable vibration and shock resistant connectivity.
PRODUCT SOLUTIONS:
FRCIR Standard, FRCIR290, CIRM12, DSR, CIR Fiber Optic, HTB, Junction Boxes, Jumper Cables, FRCIR Marine Bronze

SIGNALING
ITT Veam and Cannon connectors support modern intelligent traffic management systems, which include a diverse range of track-side applications, both inside communications cabinets and in the most exposed outdoor harsh environments.
PRODUCT SOLUTIONS:
FRCIR Standard, Jumper Cables, Trident

The teams at ITT Veam and ITT Cannon have an extensive, in-depth knowledge of rail from the tracks to the engine to the passenger car and every connection, every wire, every socket that makes for a smooth and efficient ride. As we continue to develop leading-edge technology, we’ll continue to bring you the reliability and durability required to push the limits of rail.
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### APPLICATIONS

#### Electrical Applications

- **Train Control**:
  - **Contact Size**: 20 ÷ 4/0
  - **Mating cycles (max.)**: 20 - 0
  - **Contact plating**: Gold / Silver
  - **Contact material**: Aluminium

- **Brake/Speed Sensors**:
  - **Contact Size**: 26 - 0
  - **Mating cycles (max.)**: 20 - 0
  - **Contact plating**: Gold / Silver
  - **Contact material**: Aluminium

- **Intervehicle**:
  - **Contact Size**: 20 ÷ 4/0
  - **Mating cycles (max.)**: 20 - 0
  - **Contact plating**: Gold / Silver
  - **Contact material**: Aluminium

- **HVAC**:
  - **Contact Size**: 20 ÷ 4/0
  - **Mating cycles (max.)**: 20 - 0
  - **Contact plating**: Gold / Silver
  - **Contact material**: Aluminium

- **Seats**:
  - **Contact Size**: 20 ÷ 4/0
  - **Mating cycles (max.)**: 20 - 0
  - **Contact plating**: Gold / Silver
  - **Contact material**: Aluminium

- **Driver's Cabin**:
  - **Contact Size**: 20 ÷ 4/0
  - **Mating cycles (max.)**: 20 - 0
  - **Contact plating**: Gold / Silver
  - **Contact material**: Aluminium

- **Toilets**:
  - **Contact Size**: 20 ÷ 4/0
  - **Mating cycles (max.)**: 20 - 0
  - **Contact plating**: Gold / Silver
  - **Contact material**: Aluminium

#### Standard Products

- **VG95234 / MIL-DTL-5015**
- **EN 45545-2**
- **EN 45545-2**

### Technical Specification

- **Number of Circuits**: 1 to 159 pins
- **Max. Operating Voltage**: 4200 Vdc ÷ 3000 Vac
- **Max. Dielectric Withstanding Voltage**: 2000 VAC - 500V DC/AC
- **Fire & Smoke standards**: EN 45545-2

### Contact Specifications

- **Contact material**: Aluminium
- **Contact plating**: Gold / Silver
- **Contact size**: 20 ÷ 4/0

### Mechanical Specifications

- **Mating cycles (max.)**: 2000
- **Max. shock resistance (g's)**: 50g
- **Max. Vibration resistance**: 50g
- **Max. shock resistance (g's)**: 50g
- **Max. Vibration resistance**: 50g

### Power and Signal Layouts

- **Contact size**: 20 ÷ 4/0
- **Mating cycles (max.)**: 20 - 0
- **Contact plating**: Gold / Silver
- **Contact material**: Aluminium

### Electrical Specifications

- **Contact size**: 20 ÷ 4/0
- **Mating cycles (max.)**: 20 - 0
- **Contact plating**: Gold / Silver
- **Contact material**: Aluminium

### Environmental Specifications

- **Contact size**: 20 ÷ 4/0
- **Mating cycles (max.)**: 20 - 0
- **Contact plating**: Gold / Silver
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### Table of Specifications

- **Contact Size**: 20 ÷ 4/0
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### Electrical Interfaces

- **Contact size**: 20 ÷ 4/0
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- **Contact material**: Aluminium

### Environmental Interfaces

- **Contact size**: 20 ÷ 4/0
- **Mating cycles (max.)**: 20 - 0
- **Contact plating**: Gold / Silver
- **Contact material**: Aluminium

### Mechanical Interfaces

- **Contact size**: 20 ÷ 4/0
- **Mating cycles (max.)**: 20 - 0
- **Contact plating**: Gold / Silver
- **Contact material**: Aluminium

### Chemical Interfaces

- **Contact size**: 20 ÷ 4/0
- **Mating cycles (max.)**: 20 - 0
- **Contact plating**: Gold / Silver
- **Contact material**: Aluminium

### Electrical Components

- **Contact size**: 20 ÷ 4/0
- **Mating cycles (max.)**: 20 - 0
- **Contact plating**: Gold / Silver
- **Contact material**: Aluminium

### Environmental Components

- **Contact size**: 20 ÷ 4/0
- **Mating cycles (max.)**: 20 - 0
- **Contact plating**: Gold / Silver
- **Contact material**: Aluminium

### Mechanical Components

- **Contact size**: 20 ÷ 4/0
- **Mating cycles (max.)**: 20 - 0
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### Chemical Components

- **Contact size**: 20 ÷ 4/0
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### Electrical Accessories

- **Contact size**: 20 ÷ 4/0
- **Mating cycles (max.)**: 20 - 0
- **Contact plating**: Gold / Silver
- **Contact material**: Aluminium

### Environmental Accessories

- **Contact size**: 20 ÷ 4/0
- **Mating cycles (max.)**: 20 - 0
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### Mechanical Accessories

- **Contact size**: 20 ÷ 4/0
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### Chemical Accessories

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- **Mating cycles (max.)**: 20 - 0
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### CUSTOM PRODUCTS

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<thead>
<tr>
<th>CIR FIBER OPTIC</th>
<th>POWER PLATES</th>
<th>HTB</th>
<th>JUNCTION BOXES</th>
<th>JUMPER CABLES</th>
<th>FRCCR STAINLESS STEEL</th>
<th>FRCCR MARINE BRONZE</th>
<th>VAR900</th>
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### APPLICATIONS KEY:
- **Switchgear**
- **Data Communication**
- **Railway Power**
- **Power Distribution**
- **Convertible Attachments**

### Key Specifications:

- **Power and Signal Capacities**
- **Contact Size**
- **Contact Resistance**
- **Contact Wear**
- **Contact Dimensions**
- **Contact Materials**
- **Contact Plating**
- **EMI/RFI Shielding**
- **Wire Range**
- **Contact Resistance**
- **Contact Plating**
- **EMI/RFI Shielding**
- **Wire Range**

### Additional Features:
- **Cable Jacket Sealing**
- **Insert Material**
- **Contact Material**
- **Contact Plating**
- **EMI/RFI Shielding**
- **Wire Range**

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**ITT Veam and Cannon difference**
- Global capabilities & local support
- Proven application expertise
- A century of rail interconnect leadership
- A committed innovator & business partner

**About ITT**
ITT is a diversified leading manufacturer of highly engineered critical components and customized technology solutions for the energy, transportation and industrial markets. Building on its heritage of innovation, ITT partners with its customers to deliver enduring solutions to the key industries that underpin our modern way of life. Founded in 1920, ITT is headquartered in White Plains, N.Y., with employees in more than 35 countries and sales in a total of approximately 125 countries. For more information, visit www.itt.com.

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**Global interconnect solutions for the rail industry.**

We Connect
Passengers to their next adventure

For more than a century, ITT has developed innovative connector solutions for the world’s harshest environments. With facilities in the United States, Germany, Italy, Mexico, China and Japan, each with its unique strengths, we offer our customers Interconnect Solutions that are truly Engineered for Life.

In addition to this truly global footprint, we offer highly specialized rail industry expertise. We have a proven track record as an industry leader in harsh-environment applications. This has equipped us with the knowledge needed to continue to produce extremely advanced, resilient and reliable connectors for our customers’ most challenging rail applications.
Connect with the experts

ITT Interconnect Solutions’ Veam and Cannon brands are world leaders in the design and manufacture of highly engineered connector solutions for the rail market.