



# Connectors for Commercial Vehicle Applications

• APTIV •

Aptiv is a global technology company that enables a safer, greener and more connected future with scalable hardware and software solutions.

Our **Connection Systems** business offers a full range of connectivity products for power and data applications.

The portfolio includes low- and high-voltage connectors for conditions ranging from light duty to harsh environments, as well as high-speed data connectors that support increasing bandwidth requirements.



# Aptiv Connection Systems

PIONEERING MODERN CONNECTIVITY SOLUTIONS

## Global Excellence in Connectivity

Aptiv Connection Systems stands at the forefront of electrical and electronic connectivity innovation, delivering premium connection systems that consistently exceed global customer expectations. Our cutting-edge technologies and processes are shaped by deep customer insights and a relentless pursuit of innovation. We remain dedicated to collaborating with partners to develop connectivity solutions that meet demanding quality and performance standards across multiple industries.

## Advanced Manufacturing & Design Capabilities

Using state-of-the-art manufacturing technologies and comprehensive design services, we create high-performance, cost-efficient connection systems available as both off-the-shelf and custom solutions. Our end-to-end approach encompasses the design, manufacturing, assembly, validation and delivery of electrical/electronic connectivity products that satisfy the most stringent industry requirements.

## Versatile Solutions Portfolio

Our diverse product lineup spans from signal-level to high-power connection systems, featuring both unsealed and sealed, ergonomically designed connections for inline, device and header applications. Our comprehensive offerings position Aptiv as a trusted single-source connectivity partner.

## Transportation Market Applications

Aptiv Connection Systems delivers specialized connectivity solutions across several transportation sectors:

- Automotive
- Medium- and heavy-duty trucks
- Agricultural equipment
- Construction machinery
- Marine applications
- Mass transit systems
- Recreational vehicles
- Motorcycle technology

## The Aptiv Difference

### Comprehensive Product Ecosystem

An extensive range of connectivity solutions

### Pioneering Interconnect Technologies

At the cutting edge of the industry

### Cross-Industry Expertise

Deep knowledge across multiple connector applications

### A Holistic Systems Approach

Integrated solutions rather than isolated components

### Customer-Centric Innovation

Solutions developed around real client needs

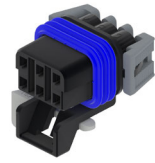
### Exceptional Service Standards

Consistently exceeding customer expectations

### A Robust Global Presence

Seamless support across international markets

# Connector Series for Commercial Vehicle Applications



## METRI-PACK™

SAE J2030-compliant with premium silver interface plating for superior commercial vehicle performance



## GT

Connector series featuring clean body terminals and low connector engage force in a small package size



## OCS 1.5 SEALED

Full inline and device series for improved warranty performance with industry standard mating interfaces

### CONNECTOR & TERMINAL RANGE

- 150, 280, 480, 630 and 800 Series
  - 1-way to 16-way configurations
  - Inline, headers and mixed
  - Maximum current: 14A (150 Series) up to 60A (800 Series)
  - 125 °C maximum temperature
  - Cable-sealed
  - Sn, Ag and Au plating
- 150 and 280 Series
  - 2-way to 20-way configurations
  - Inline, headers, mixed and lever lock
  - Maximum current: 15A (150 Series), 25A (280 Series)
  - 125 °C maximum temperature
  - Cable-sealed
  - Sn, Ag and Au plating
- 2-way to 16-way, female and male
  - Six standard indexes
  - Primary lock reinforcement (PLR)
  - CPA available
  - 21A continuous maximum current rating
  - -40 °C to +125 °C operating temperature range
  - IP69K-rated sealing

### FEATURES & BENEFITS

- The comprehensive product range supports design flexibility and application versatility
  - Both high-current and low-energy circuits are supported, for maximum electrical adaptability
  - Robust terminals assure correct alignment and connection integrity
  - Connectors are compatible with global standard male blade dimensions for seamless integration
  - Connector Position Assurance (CPA) and Terminal Position Assurance (TPA) provide superior connection reliability
  - Environmental sealing provides exceptional protection against temperature extremes, chemicals and abrasion
- Tangless terminals deliver superior durability and performance
  - Low insertion force benefits reliability and ergonomics
  - The pump-handle primary lock enables lower engage force and easy disassembly
  - Secondary lock, CPA and TPA ensure connection integrity
  - ISO blade standards are supported
  - Space-optimized packaging helps maintain electrical performance while optimizing the footprint
  - The mixed terminal capability provides design flexibility
  - A protected seal interface ensures consistent reliability in challenging environments
- Compatibility with industry standard mating interfaces
  - Robust reliability and designed-in durability
  - Housing lock overstress protection to prevent lock relaxation or damage
  - Polyester resins for an enhanced audible click, to improve operator build feedback and dimensional stability in all seasons
  - Optimized PLR for improved terminal unseat detection
  - Cavity designed with a positive forward stop to prevent terminal push-through
  - Optimized optional CPA that provides additional lock performance to ensure connectors stay mated

### TYPICAL APPLICATIONS

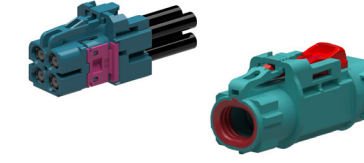
- Main wiring harness and switches
  - Back-up relay alarm
  - HVAC valves and actuators
  - Electronic fuel injection
  - Cooling fan
  - Hydraulics
  - Lighting systems
  - Front console and tractor cab wiring
  - Chassis and cab roof wiring
  - Transmission harness and rear wiring
- Engine and chassis wiring harness
  - Resistor assemblies
  - Open operator station and cab wiring
  - Left-hand joystick controls
  - Horn
  - Valve manifold hydraulics
  - Front console wiring
  - Front- and rear-half wiring
  - Transmission harness
- Main wiring harness
  - Hydraulics
  - Front console wiring
  - Signal lights
  - Instrument panel wiring
  - Fuel preheater
  - Chassis wiring

# Connector Series for Commercial Vehicle Applications



## CTCS XP/SP, UNSEALED & FLEX

Surpassing the industry's toughest standards set by leading commercial vehicle manufacturers



## HIGH-SPEED DATA CONNECTORS

Enabling seamless data transmission for applications such as radars, lidars, cameras and other sensors



## HES

Circular connectors engineered for uncompromising performance in extreme environments

### CONNECTOR & TERMINAL RANGE

- Inline and device applications
  - 2-way to 62-way configurations
  - 1.5 mm, 2.8 mm and 6.3 mm blade sizes and mixed cavity configurations
  - Sealed and unsealed applications
  - Flame-retardant V0 material option
  - Panel, strap/clip and bracket male mounting options
  - Modular mixed data, power and signal connections
  - Two lock-assist mechanisms for sealed connectors: slider lock and lever lock
- High Speed FAKRA
  - Mini-coax connectors
  - Automatable Modular Ethernet Connectors (AMEC™)
  - AMEC™-H High-Speed Modular Twisted-Pair Data (H-MTD®)
- 24 shell connectors
  - Six terminal patterns
  - Standard/reverse configurations
  - Thin wall, regular wall and heavy wall
  - 19 mm, 22 mm and 25 mm conduit adapters, straight and right angle
  - 50-way to 60-way header system
  - Pin/sleeve terminals compatible with MIL 390329 industry standard cavity
  - Ni or Au plating

### FEATURES & BENEFITS

- Optional back shells in 180° and 90° angles with additional ribbing provide improved vibration resistance
  - The zero-gap back shell design protects against dust and debris ingress
  - Secure locking features prevent accidental connector release before full mating
  - A patented housing design and an enhanced terminal contact spring deliver superior vibration performance
  - The FLEX version features a modular design for customizable combinations of data, power and signal terminals
  - A robust, ergonomic slider design enables easy handling
- Multi-gigabit data rates and power over coax
  - Sealed and unsealed
  - Stable performance across temperatures and frequencies
  - Anti-stubbing technology
  - Highest mechanical robustness
  - Wide range of cable types
  - Serviceable designs
- Three-rib seal design for up to 57% higher performance
  - Up to 44% higher terminal retention while reducing plugging force
  - Validated to SAE J2030
  - HES terminals for improved electrical performance
  - Ergonomic harness assembly
  - Assembly benefits: lock window and alignment arrows; color-coordinated seals

### TYPICAL APPLICATIONS

- Cab wiring harness
  - Platform wiring harness
  - Chassis wiring
  - Transmission harness
  - Engine harness connections
  - Sensors, switches and actuators
  - Hydraulic pumps
  - Control unit connections
- Cameras
  - Antennas
  - Smart sensors and modules
  - Infotainment
  - Autonomous driving
  - Radar
  - Lidar
- Cab and armrest wiring harness
  - Platform wiring harness
  - Chassis wiring
  - Transmission harness
  - Engine harness connections

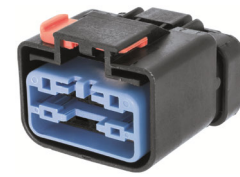
\* H-MTD® is a registered trademark of Rosenberger Hochfrequenztechnik GmbH & Co.

# Connector Series for Commercial Vehicle Applications



## WEATHER-PACK

Environmentally sealed electrical connectors field-proven to withstand extreme temperatures, chemical and fluid exposure



## APEX™ 2.8 SEALED

Heavy-duty performance and an ergonomic design, with the industry's highest current rating



## RING TERMINALS

Versatile solutions for low- and high voltage applications with crimped, welded or sealed anti-rotation capabilities

### CONNECTOR & TERMINAL RANGE

- Inline and panel-mount, 2-way to 6-way
- CPA available
- Secondary lock (cover)
- 20A continuous maximum current rating
- -40 °C to +125 °C operating temperature range
- Sealed system
- Pin and sleeve configuration
- Low-energy, low-voltage capability

- 2-way to 14-way configurations
- Inline and device
- 40A maximum current
- 150 °C maximum temperature
- Mat-sealed; IP68-rated

- Over 200 configurations available
- Sealed or unsealed options
- Small and large cross-wiring
- Low- and high-voltage solutions
- Several mating stud options
- Sn or Ag plating

### FEATURES & BENEFITS

- Triple-ribbed connector and cavity seals are made of self-lubricating silicone
- Terminals use a flex-pin and lap-lock design to prevent stress relaxation
- Dual-locking tangs lock into the connector cavity to prevent terminal pushout

- Industry's most compact 2.8 mm system
- Fully protected interface seal
- PLR and CPA to ensure connection integrity
- Mechanical polarization to eliminate mismates
- Proven environmental sealing in harsh environments

- Anti-rotation feature
- Stackable ring terminals linked at the screwing point
- Aluminum wire option
- Integrated nut options for easier assembly
- Anti-corrosion properties
- Specialty terminals designed for demanding applications

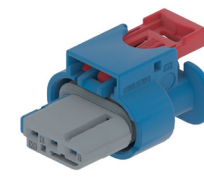
### TYPICAL APPLICATIONS

- Discharge spout and light wiring harness
- Main wiring harness and switches
- Seat suspension and console cab wiring
- Fuel injection pump
- Transmission wiring
- Chassis wiring
- 12V receptacle, power take-off (PTO)
- Sprayer harness
- Third wheel assist wiring
- Tank wiring; sensors, meters, valves
- Hydraulic lift wiring

- Engine and chassis wiring harness
- Front console cab wiring
- Generator wiring
- Battery and related connections
- Platform wiring
- Main wiring

- Cab wiring harness
- Backup alarm
- Seat air suspension
- Battery connections
- Transmission harness
- Main wiring harness
- Engine and chassis wiring harness
- Lighting systems; revolving light
- Front console harness

# Connector Series for Commercial Vehicle Applications



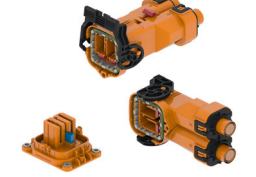
## 48V CONNECTORS

Broad portfolio of 48V connectors with proven, robust terminal systems to avoid intermittent contacts



## HV CONNECTORS AUX MODULES

Largest global portfolio of auxiliary module connections for battery electric vehicles (BEVs) and hybrids



## HV CONNECTORS POWER CONVERSION

Largest global portfolio of power conversion connections for BEVs and hybrids

### CONNECTOR & TERMINAL RANGE

- LVCS 0.64 and 2.8 Series
- CMC 0.64 V0 Series
- CTS 1.2 SensoMate® Series
- Apex 2.8 Sealed Series
- CTS 9.5 Sealed Series
- DCS 9.5 Power Sealed/4.8 Series
- Mixed CTS 9.5 and Apex 1.2 Series
- PowerPack LV 1000 and 2000 Connectors
- PowerPack 48V Sealed Ring Connectors

- ShieldPack™ HV630
- ShieldPack HV280
- ShieldPack HV AK Class 1, 2
- Shield Pack HV 280/630 Splice
- ShieldPack APEX280
- ShieldPack HV HES240 onboard charger (OBC)
- PowerPack HV630 OBC
- Headers and connectors

- DCT1400
- ShieldPack HV AK Class 4
- ShieldPack HV RCS800, 890, 1100, and 1190
- PowerPack HV RCS800
- ShieldPack HV Metal and Plastic Pass-Throughs

### FEATURES & BENEFITS

- Industry standard interfaces are supported
- Connectors withstand high vibration levels and operating temperatures
- Connectors meet IEC creepage and clearance standards up to 60V
- A terminal secondary lock eliminates terminal pushout risk
- Sealed connectors mitigate risk of electrochemical corrosion

- Industry standard interfaces
- Withstand high vibration levels and operating temperatures
- Multiple layouts and high-voltage interlock loop (HVIL) options
- Finger-proof, touch-safe designs
- Tool-less mating and un-mating systems
- Space-saving options
- Field-proven designs used across electrification market

- Industry standard interfaces
- Withstand high vibration levels and operating temperatures
- Multiple layouts and HVIL options
- Finger-proof, touch-safe designs
- Tool-less mating and un-mating systems
- Innovative Screw Position Assurance
- Field-proven designs used across electrification market

### TYPICAL APPLICATIONS

- Motor and drivetrain connections
- Lighting applications
- Pump applications
- Battery connections
- Sensor and actuator connections
- Other auxiliaries

- Engine auxiliaries: AC compressors, pumps and heaters
- DC-to-DC converter
- Onboard charger
- Battery pack
- HV power distribution unit (PDU)

- Traction drives
- Battery connections
- Electric motors
- HV PDU


# Commercial Vehicle Application Guide

**HIGH SPEED DATA CONNECTORS**




- Cameras and antennas
- Smart sensors
- Infotainment features
- Autonomous systems
- Radar and lidar

**48V**



- Motor and drivetrain connections
- Lighting applications
- Pump applications
- Battery connections
- Sensor and actuator connections


**OCS** **METRI-PACK**



**GT** **WEATHER-PACK**




**APEX**




- Main, chassis and instrument panel wiring
- Hydraulics
- HVAC valves, actuators
- Joystick controls
- Signal lights
- Fuel preheater
- Generator wiring

**CTCS**




**HES**




- Cab and armrest wiring
- Platform and chassis wiring
- Transmission and engine wiring
- Sensors, hydraulics, control unit, switches and actuators

**HV AUX MODULES**




- Engine auxiliaries: A/C compressors, pumps and heaters
- DC-to-DC converter; OBC
- Battery pack; HV PDU

**HV POWER CONVERSION**



- Traction drives
- Battery connections
- HV PDU
- Electric motors

**RING TERMINALS**



- Cab and front console wiring
- Backup alarm
- Seat air suspension
- Battery connections
- Transmission harness
- Main, engine and chassis wiring harness
- Lighting systems





# For More Information

[VISIT OUR WEBSITE](#)

[BROWSE OUR E-CATALOG](#)



• **APTIV** •

CS-SP-197-CV-EN0226  
aptiv.com | © 2026 Aptiv. All rights reserved