



Connectors for Commercial Vehicle Applications

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

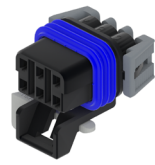
Exceptional Service Standards

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

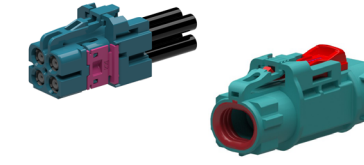
- Main wiring harness and switches
 - Back-up relay alarm
 - HVAC valves and actuators
 - Electronic fuel injection
 - Cooling fan
 - Hydraulics
 - Lighting systems
 - Front console and tractor cab wiring
 - Chassis and cab roof wiring
 - Transmission harness and rear wiring
- Engine and chassis wiring 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

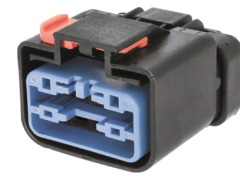
* H-MTD® is a registered trademark of Rosenberger Hochfrequenztechnik GmbH & Co.

Connector Series for Commercial Vehicle Applications



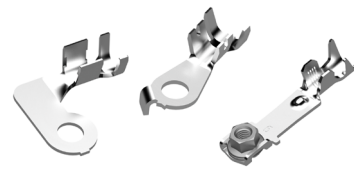
WEATHER-PACK

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

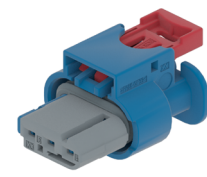
TYPICAL APPLICATIONS

- 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

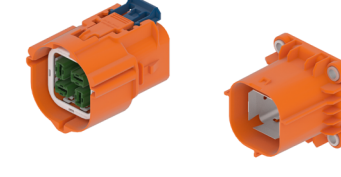
- Cab wiring harness
- Backup alarm
- Seat air suspension
- Battery connections
- Transmission harness
- Main wiring harness
- Engine and chassis wiring harness
- Lighting systems; revolving light
- Front console harness

Connector Series for Commercial Vehicle Applications



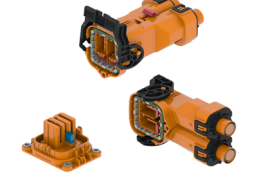
48V CONNECTORS

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

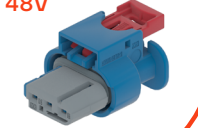
Commercial Vehicle Application Guide

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

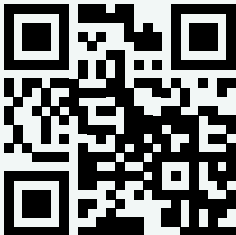


- Cab and front console wiring
- Backup alarm
- Seat air suspension
- Battery connections
- Transmission harness
- Main, engine and chassis wiring harness
- Lighting systems



For More Information

VISIT OUR WEBSITE



BROWSE OUR E-CATALOG



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