

Connectors for Construction 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 Connectivity Excellence

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

Product Series for Construction Applications



HIGH-SPEED DATA CONNECTORS

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



CTCS XP/SP, UNSEALED & FLEX

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



HES

Circular connectors engineered for uncompromising performance in extreme environments

CONNECTOR & TERMINAL RANGE		
<ul style="list-style-type: none">High Speed FAKRAMini-coax connectorsAutomatable Modular Ethernet Connectors (AMEC)High-Speed Modular Twisted-Pair Data (H-MTD)	<ul style="list-style-type: none">Inline and device applications2-way to 62-way configurations1.5mm, 2.8mm and 6.3mm blade sizes and mixed cavity configurationsSealed and unsealed applicationsFlame-retardant V0 material optionPanel, strap/clip and bracket male mounting optionsModular mixed data, power and signal connectionsTwo lock-assist mechanisms for sealed connectors: slider lock and lever lock	<ul style="list-style-type: none">24 shell connectorsSix terminal patternsStandard/reverse configurationsThin wall, regular wall and heavy wall19mm, 22mm and 25mm conduit adapters, straight and right angle50-way to 60-way header systemPin/sleeve terminals compatible with MIL 390329 industry standard cavityNi or Au plating
FEATURES & BENEFITS		

TYPICAL APPLICATIONS		
<ul style="list-style-type: none">CamerasAntennasSmart sensors and modulesInfotainmentAutonomous drivingRadarLidar	<ul style="list-style-type: none">Cab wiring harnessPlatform wiring harnessChassis wiringTransmission harnessEngine harness connectionsSensors, switches and actuatorsHydraulic pumpsControl unit connections	<ul style="list-style-type: none">Cab and armrest wiring harnessPlatform wiring harnessChassis wiringTransmission harnessEngine harness connections

Product Series for Construction 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		
<ul style="list-style-type: none">150, 280, 480, 630, and 800 Series1-way to 16-way configurationsInline, headers, and mixedMaximum current: 14A (150 Series) up to 60A (800 Series)125° C maximum temperatureCable sealedSn, Ag, and Au plating	<ul style="list-style-type: none">150 and 280 Series2-way to 20-way configurationsInline, headers, mixed and lever lockMaximum current: 15A (150 Series), 25A (280 Series)125° C maximum temperatureCable sealedSn, Ag and Au plating	<ul style="list-style-type: none">2-way to 16-way, female and maleSix standard indexesPrimary lock reinforcement (PLR)CPA available21A continuous maximum current rating-40° C to +125° C operating temperature rangeIP69K-rated sealing
FEATURES & BENEFITS		
<ul style="list-style-type: none">The comprehensive product range supports design flexibility and application versatilityBoth high-current and low-energy circuits are supported, for maximum electrical adaptabilityRobust terminals assure correct alignment and connection integrityConnectors are compatible with global standard male blade dimensions for seamless integrationConnector Position Assurance (CPA) and Terminal Position Assurance (TPA) provide superior connection reliabilityEnvironmental sealing provides exceptional protection against temperature extremes, chemicals and abrasion	<ul style="list-style-type: none">Tangleless terminals deliver superior durability and performanceLow insertion force benefits reliability and ergonomicsThe pump-handle primary lock enables lower engage force and easy disassemblySecondary lock, CPA and TPA ensure connection integrityISO blade standards are supportedSpace-optimized packaging helps maintain electrical performance while optimizing the footprintThe mixed terminal capability provides design flexibilityA protected seal interface ensures consistent reliability in challenging environments	<ul style="list-style-type: none">Compatibility with industry standard mating interfacesRobust reliability and designed-in durabilityHousing lock overstress protection to prevent lock relaxation or damagePolyester resins for an enhanced audible click, to improve operator build feedback and dimensional stability in all seasonsOptimized PLR for improved terminal unseat detectionCavity designed with a positive forward stop to prevent terminal push-throughOptimized optional CPA that provides additional lock performance to ensure connectors stay mated
TYPICAL APPLICATIONS		

<ul style="list-style-type: none">Main wiring harness and switchesBack-up relay alarmHVAC valves and actuatorsElectronic fuel injectionCooling fanHydraulicsLighting systemsFront console and tractor cab wiringChassis and cab roof wiringTransmission harness and rear wiring	<ul style="list-style-type: none">Engine and chassis wiring harnessResistor assembliesOpen operator station and cab wiringLeft-hand joystick controlsHornValve manifold hydraulicsFront console wiringFront- and rear-half wiringTransmission harness	<ul style="list-style-type: none">Main wiring harnessHydraulicsFront console wiringSignal lightsInstrument panel wiringFuel preheaterChassis wiring
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Product Series for Construction Applications



APEX 2.8 SEALED

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



WEATHER-PACK

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



RING TERMINALS

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

CONNECTOR & TERMINAL RANGE

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

- 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

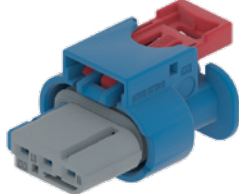
FEATURES & BENEFITS

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

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

Product Series for Construction Applications



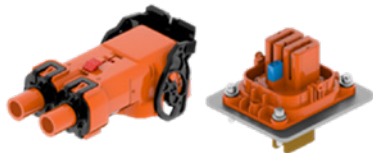
48V CONNECTORS

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

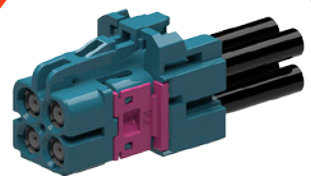
- LVCS 0.64 and 2.8 Series
 - CMC 0.64 V0 Series
 - CTS 1.2 SensoMate Series
 - Apex 2.8 Sealed Series
 - CTS 9.5 Sealed Series
 - DCS 9.5 Power Sealed/4.8 Series
 - Mixed CTS 9.5 and Apex 1.2 Series
 - PowerPack LV 1000 and 2000 Connectors
 - PowerPack 48V Sealed Ring Connectors
- ShieldPack HV630
 - 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



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



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



HV AUX MODULES

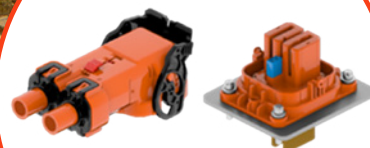
- Engine Auxiliaries: A/C compressors, pumps, and heaters
- DC-to-DC converter; OBC
- Battery pack; HV PDU



CTCS

HES

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



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

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• **APTIV** •

CS-SP-176-CONS-En0925