

Month 00, Year

**● CONNECTION SYSTEMS.  
TRANSPORTATION  
MARKET PORTFOLIO.**

• APTIV •

# Contents




Aptiv overview

A photograph showing three parallel, bright, rectangular light beams or shadows cast across a dark, tiled floor. The perspective is from a low angle, looking up towards the ceiling.



Connection Systems overview

An aerial view of a dense urban cityscape at dusk or night. The buildings are illuminated with warm lights, and the streets are visible with some traffic. The overall tone is dark with highlights from the city lights.



Manufacturing & engineering capabilities

A close-up, profile view of a person's face, focusing on the nose and cheek. The lighting is soft and warm, suggesting an indoor setting with a light source. The background is blurred.



A comprehensive portfolio

A photograph of a busy multi-lane highway at night. The cars are illuminated by their headlights and taillights, creating a sense of motion. The sky is dark, and there are some trees and buildings visible in the background.



# Welcome to Aptiv. Company overview.

We are a global technology company that develops **safer, greener and more connected** solutions, which enable the future of mobility.

• APTIV •



# Power and Flexibility of Global Footprint and Talent



**\$12.9B** 2017 revenue



**\$19.3B** in bookings



**\$1B** annual engineering investment

**147,000** Employees in **45** countries



**16,000**

engineers

**6,000**

focused on software



**109**

manufacturing sites

**14**

major technical centers

# Experienced Leadership Team



**Kevin P. Clark**  
President and  
Chief Executive Officer



**Glen De Vos**  
Senior VP and Chief Technology Officer  
and President Mobility & Services Group



**David M. Sherbin**  
Senior VP, General Counsel, Secretary  
and Chief Compliance Officer



**Susan M. Suver**  
Senior VP and Chief  
Human Resources Officer



**Michael Gassen**  
VP Sales and President Europe,  
Middle East, Africa and Russia



**Joseph R. Massaro**  
Senior VP and Chief Financial Officer



**Bill Guggina**  
VP Global Operations  
and President Mexico



**Sidney Johnson**  
Senior VP  
Global Supply Management



**Matt Peterson**  
Senior VP and Chief Information Officer



**Majdi B. Abulaban**  
Senior VP and President  
Engineered Components Group



**David Paja**  
Senior VP and President  
Advanced Safety & User Experience



**Jerome Dorlack**  
Senior VP and President  
Electrical Distribution Systems  
and President South America



**Simon Yang**  
Managing Director Connection Systems,  
Asia Pacific and President Asia Pacific



# Addressing **Mobility's** Toughest Challenges

# Urban Mobility **CHALLENGES** by 2050



**+70%**

Of Population



**+40%**

freight



**5x**

Emissions



**4x**

Cost



**3x**

Travel time

# **BENEFITS** of mobility automation to cities



**28%**

Fewer Vehicles



**87%**

Fewer Accidents



**66%**

Lower Emissions



**44%**

Fewer Parking Spaces



**30%**

Shorter Travel Time

# Aptiv Addressing Mobility's Toughest Challenges

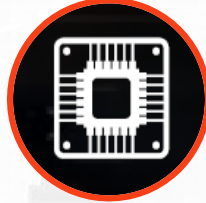
Aptiv provides end-to-end solutions that allow us to commercialize new mobility

## SMART VEHICLE ARCHITECTURE

SOFTWARE



SENSING AND COMPUTING



SIGNAL AND POWER DISTRIBUTION

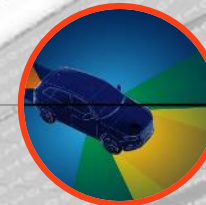


CONNECTIVITY



## SMART MOBILITY SOLUTIONS

ACTIVE SAFETY



USER EXPERIENCE



CONNECTED SERVICES



AUTONOMOUS SYSTEMS



• APTIV •

# Industry-leading Software Capabilities

## Global Footprint



Bangalore, India • Boston, MA • Krakow, Poland • Mountain View, CA  
• Pittsburgh, PA • Shanghai, China • Wuppertal, Germany

## 30+ Key Partnerships

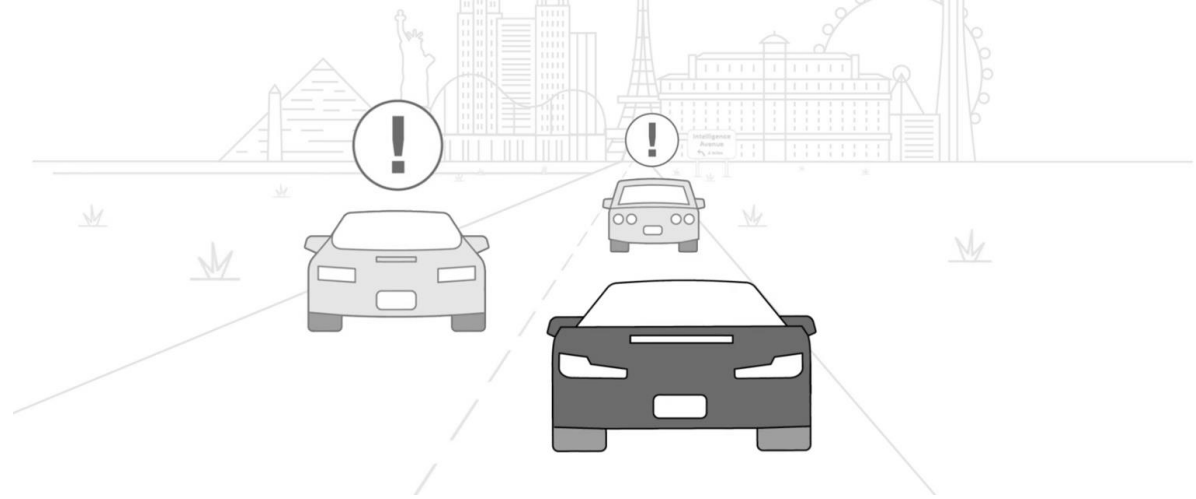


## University Engagement



# Software

STRONG FOUNDATION IN SOFTWARE AND  
ARTIFICIAL INTELLIGENCE EXPERTISE



ENGINEERS DEVOTED TO  
SOFTWARE

**6,000+**

LINES OF CODE  
SHIPPED DAILY

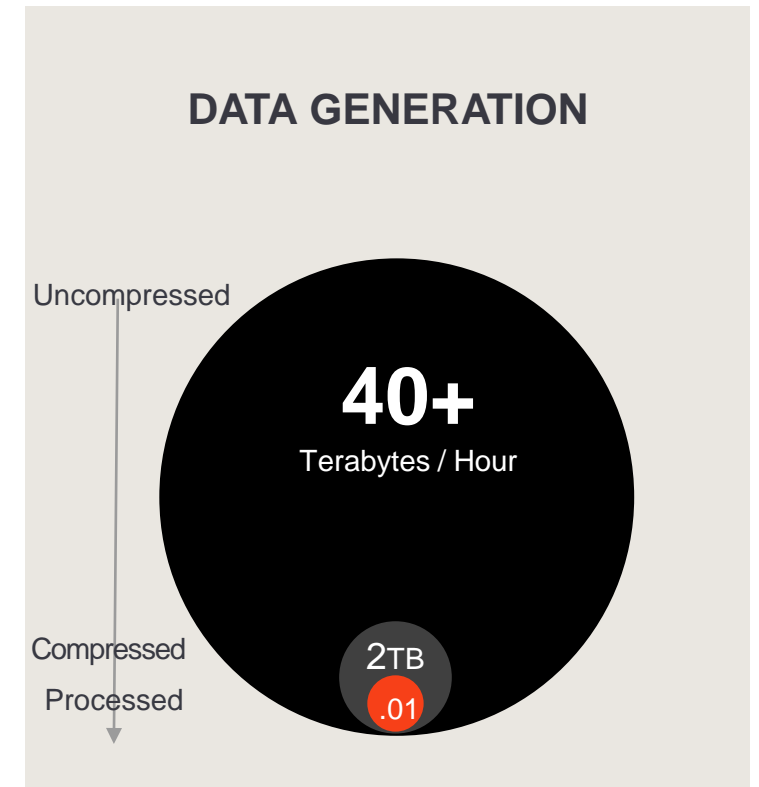
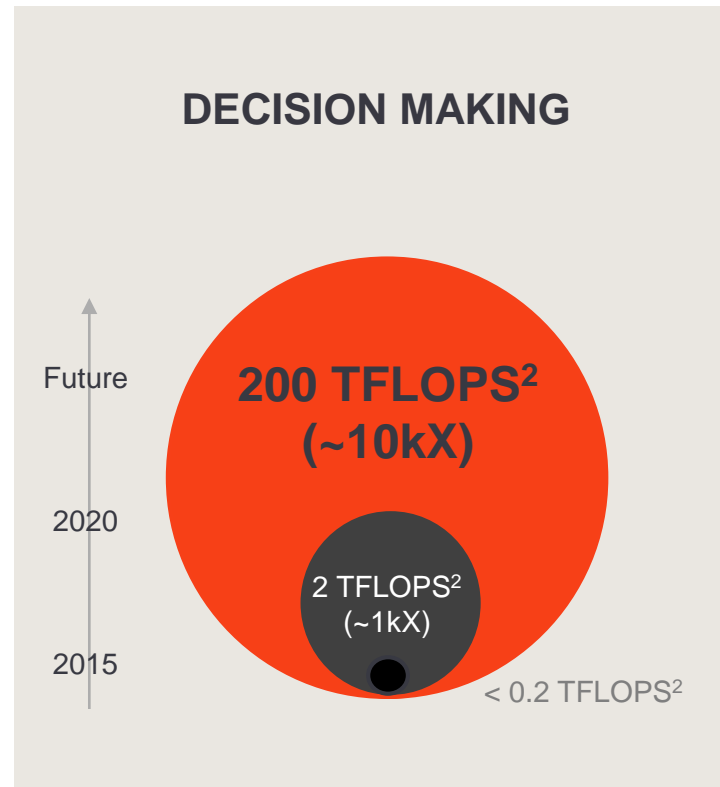
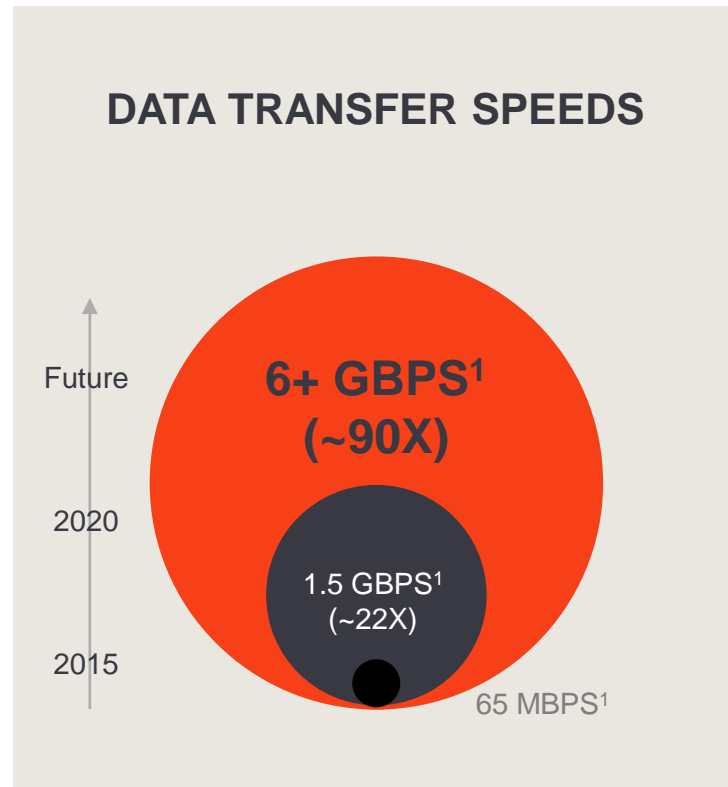
**40B**

LEADER IN SOFTWARE  
DESIGN & USER EXPERIENCE



# Sensing & Computing

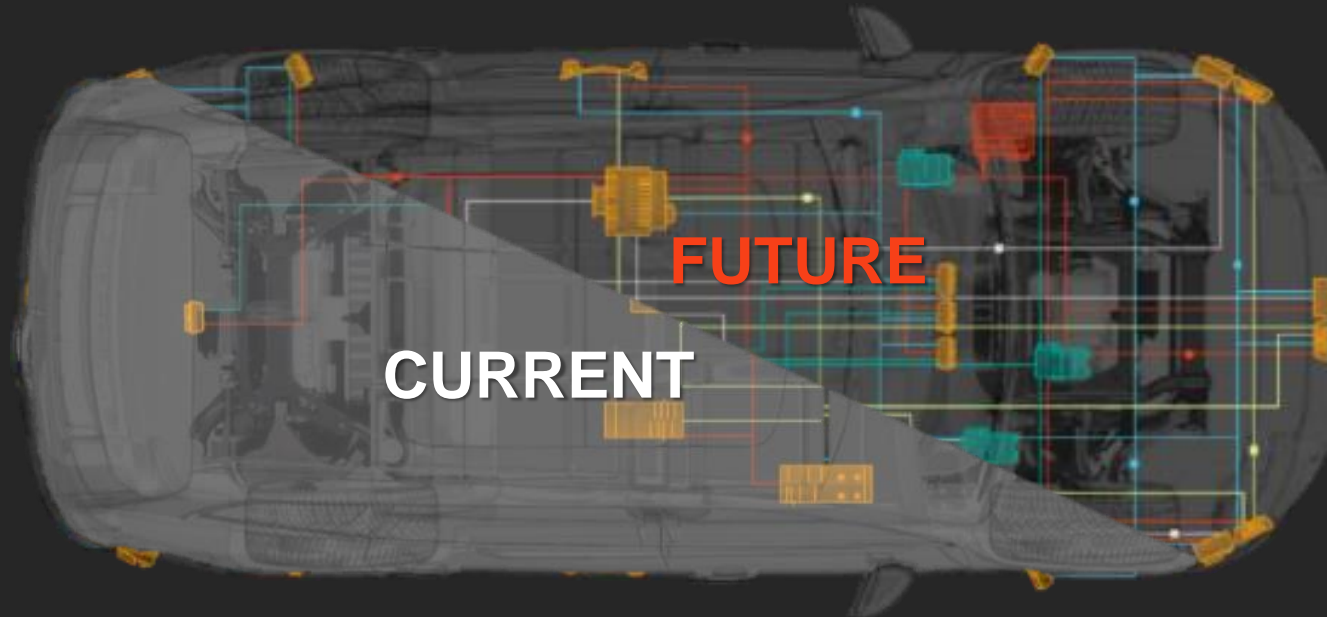
VEHICLES DEMANDING EXPONENTIALLY MORE COMPUTING POWER



1. Megabits per second and gigabits per second
2. Teraflops (TFLOPS) – trillion floating point operations per second

# Signal & Power Distribution

SOFTWARE ENABLED FEATURES DRIVING GREATER DEMANDS FOR OPTIMIZED  
NEXT GENERATION ARCHITECTURES

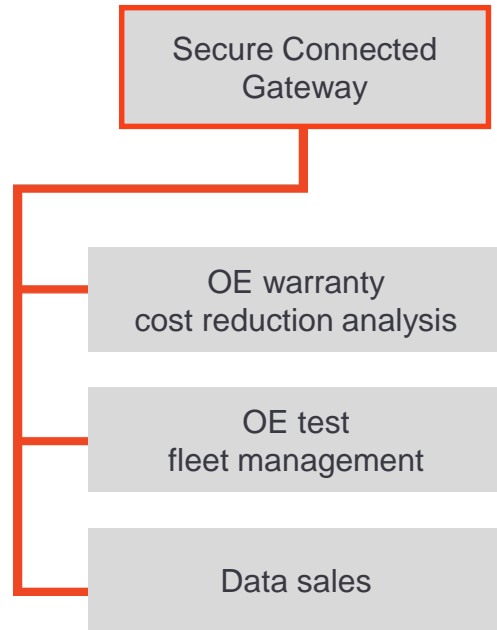


# Connectivity

## CONNECTED SERVICES

**CONTROLTEC**  
UNLOCKING THE POWER OF DATA

### Embedded Edge Processing & Data Acquisition

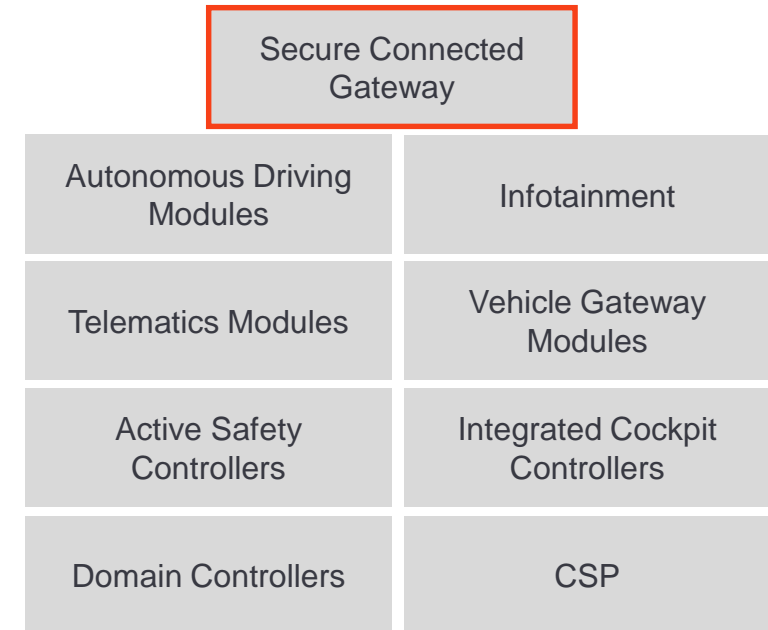


• **A P T I V** •



**MOVIMENTO**<sup>®</sup>  
Ready. Connect. Go.™

### OTA Embedded Hardware



Connected Services technology to be embedded in Aptiv products by 2020

# Connectivity

SOFTWARE-ENABLED SOLUTIONS

## Scalable cloud platform that:

Enables Aptiv to deliver AMoD and Connected Services

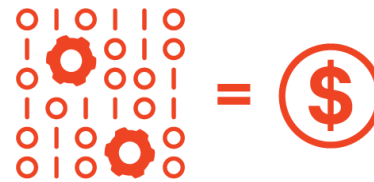
Supports 3rd party application ecosystem and data brokerage



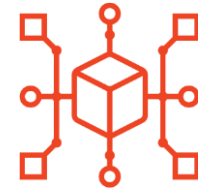
**AMoD Services**



**Connected Services**  
(e.g. OTA, fleet management)



**3rd Party  
Data Brokerage**



**3rd Party Application  
Ecosystem**

# Enabling End-To-End Mobility Solutions

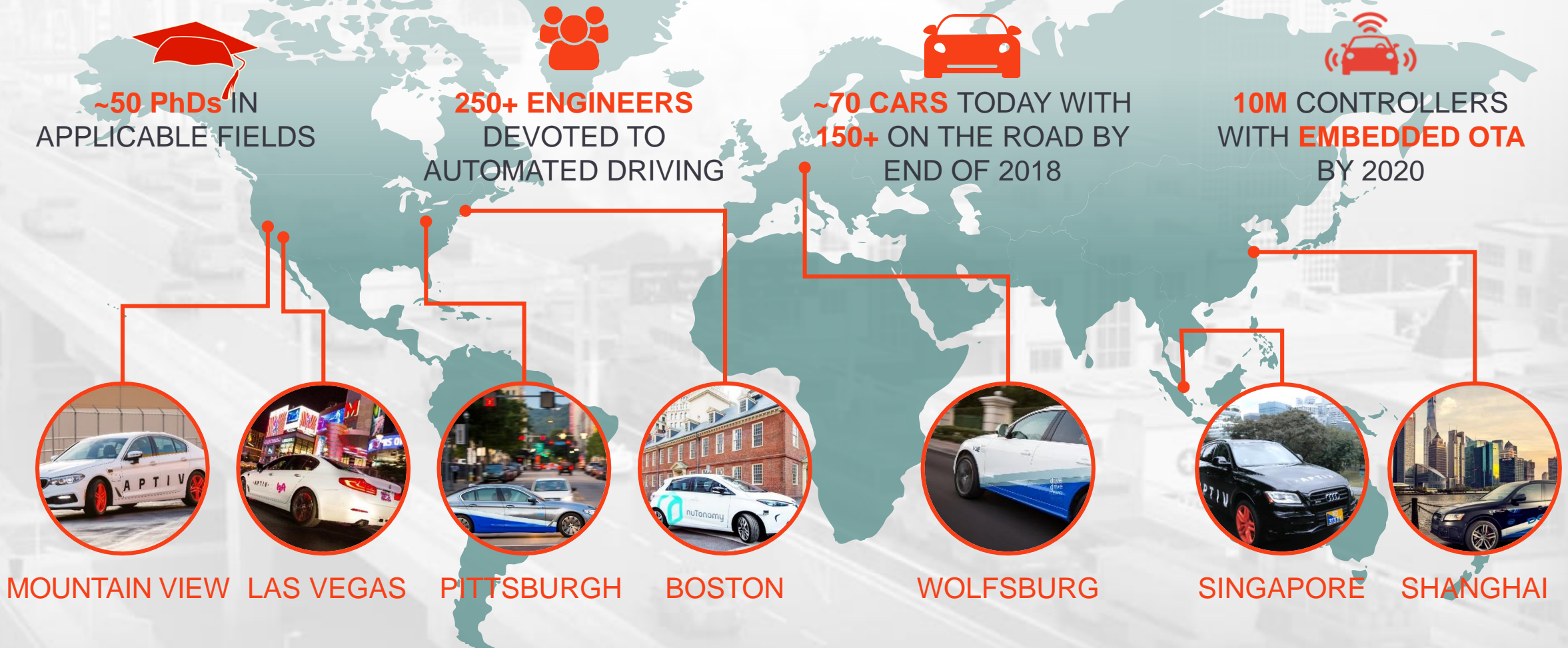
CONNECTING THE VEHICLE TO THE SURROUNDING ECOSYSTEM; DATA SERVICES AND SMART MOBILITY MOVE BEYOND THE VEHICLE TO CREATE VALUE.





# Global Mobility & Services Capabilities

UNMATCHED POSITION IN MOBILITY & SERVICES WITH DEEP CAPABILITIES IN SOFTWARE DEVELOPMENT, AUTOMOTIVE GRADE INDUSTRIALIZATION AND SYSTEMS INTEGRATION



MOUNTAIN VIEW

LAS VEGAS

PITTSBURGH

BOSTON

WOLFSBURG

SINGAPORE

SHANGHAI



# Global Connection Systems overview.

# APTIV's Business Segments

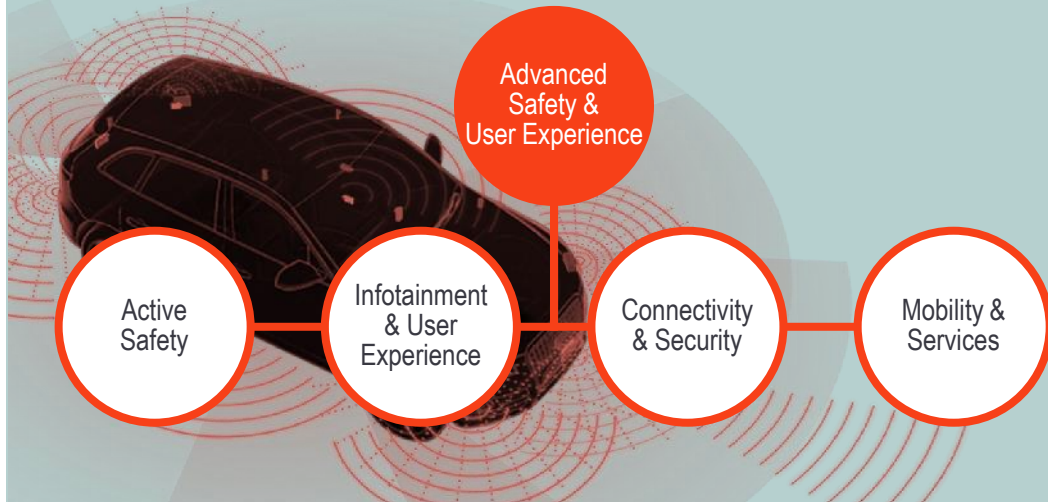
SEGMENTS REFLECT EVOLVING CAPABILITIES AS THE ONLY PROVIDER OF INTEGRATED BRAIN AND NERVOUS SYSTEM

## ADVANCED SAFETY & USER EXPERIENCE



Formerly Electronics & Safety

Encompasses our deep expertise in **software, centralized computing platforms, advanced safety systems** and **automated driving**, while acknowledging the growth in areas that enrich the **in-vehicle experience**.

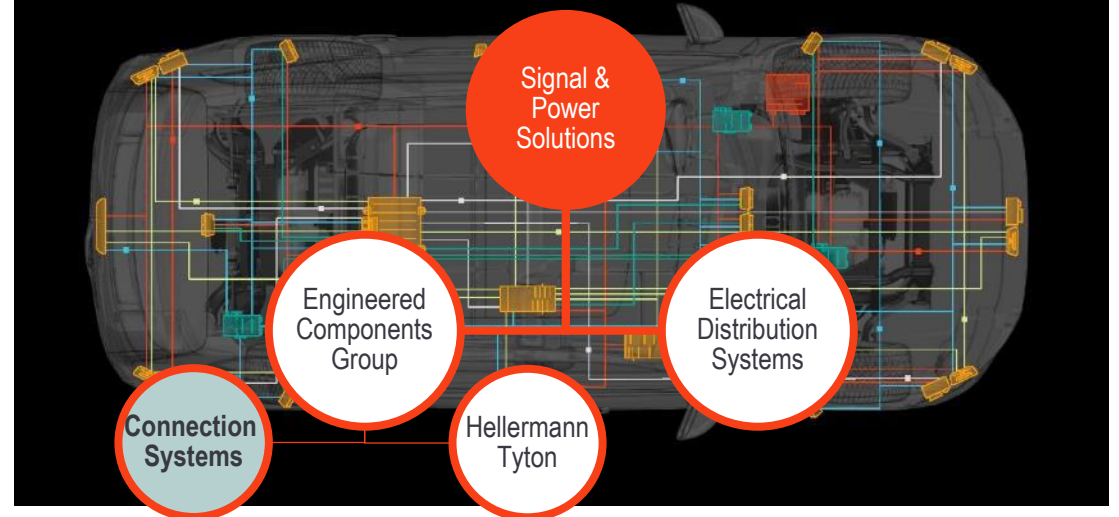


## SIGNAL & POWER SOLUTIONS



Formerly Electrical / Electronic Architecture

Reflects the growing significance of **next-generation architectures** with **high speed data** and **electrical power distribution** as the foundation necessary for future mobility.



# Our valued customers

The image displays a grid of logos for various automotive companies, categorized by their relationship with Aptiv. The categories are system, oem, wiring tier, and distributor. Each category is represented by a red dot and a line.

Category	Company
system	Continental
	ZF
	TRW
	GM
	MOBIS
	FCA
	Delphi Technologies
	FIAT CHRYSLER AUTOMOBILES
	BOSCH
	HITACHI
Inspire the Next	
oem	SAIC
	HYUNDAI
	NISSAN
	Great Wall
	LEONI
	YUWA
	DRÄXLMAIER
	PEUGEOT
	MOTION & EMOTION
	MAN
KIA MOTORS	
HONDA	
CHANGAN	
wiring tier	Sumitomo
	YAZAKI
	Fujikura
	Cummins
	TATRA
	Mercedes-Benz
	CAT
	TOYOTA
	吉利汽车
	GEELY AUTO
distributor	Sensata
	NAVISTAR
	Ford
	PACCAR
	VOLVO
	TATA
	Mahindra
	ISUZU
	KROMBERG & SCHUBERT
	ti
Autoliv	
TAKATA	
MANDO	
LEAR CORPORATION	
APTIV	
Power & Signal	

# Power and Flexibility of Global Footprint and Talent



**\$2.9B** 2017 revenue



**10** strategic product lines



**2,431**

engineers



**30**

manufacturing sites



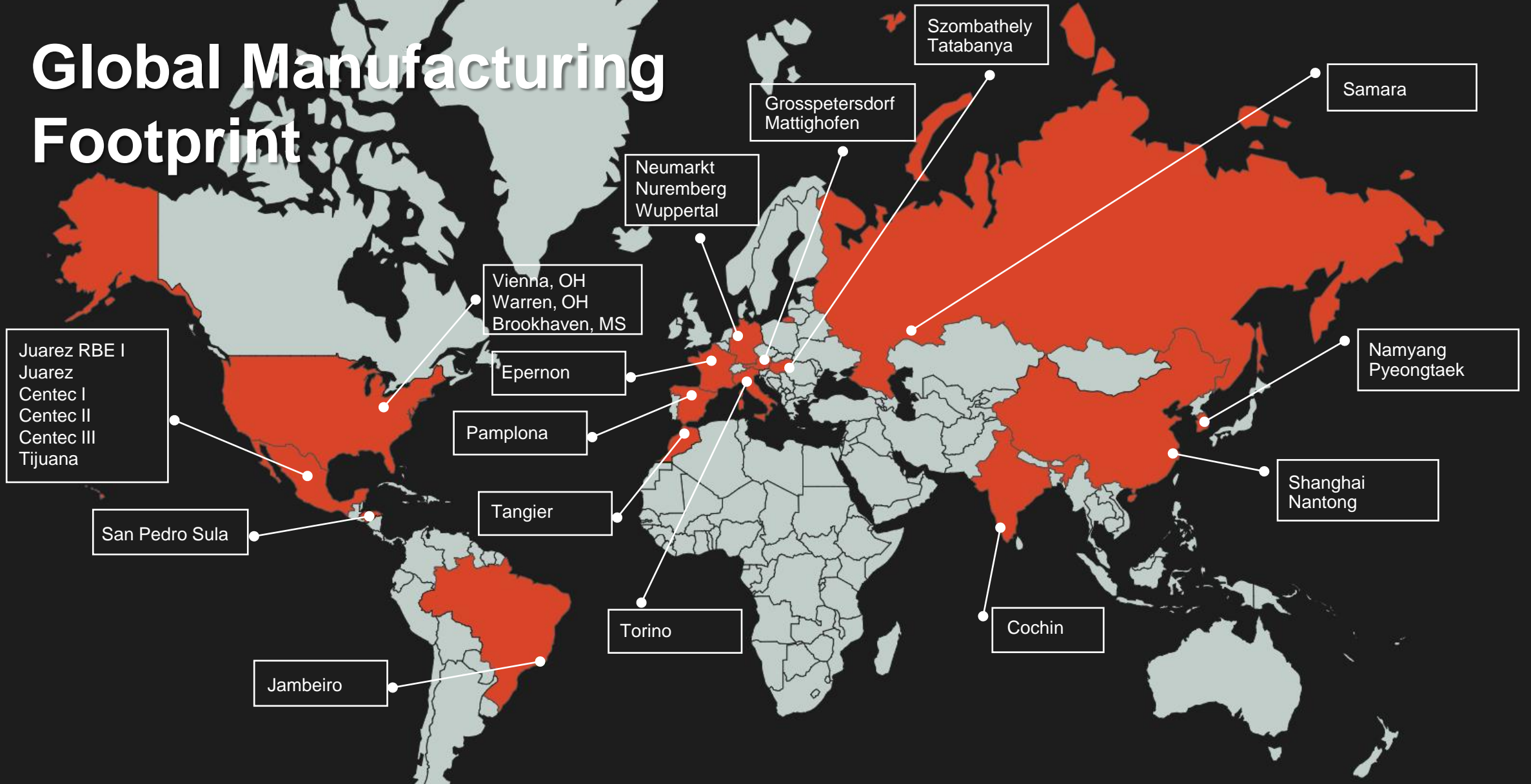
**12**

major technical centers

A person's profile is shown in silhouette, looking out of a window. The view outside the window is a cityscape at sunset or sunrise, with a warm, golden glow. The text 'Manufacturing & engineering footprint.' is overlaid on the image. The word 'footprint' is highlighted in orange.

# Manufacturing & engineering footprint.

# Global Manufacturing Footprint





# Global **innovation.** Local **implementation.**

**12**  
technical  
centers

**>2,000**  
scientists &  
engineers

**9**  
test labs,  
14,000 m<sup>2</sup>

## **R&D and engineering capabilities:**

Design | Mold flow | Metrology | Vibration | Locking efficiency  
| High Voltage testing | Temperature & Humidity cycling |  
Corrosion tests | Waterproofness tests | CT scanning



Our **scalable portfolio**  
enables smart mobility  
solutions.

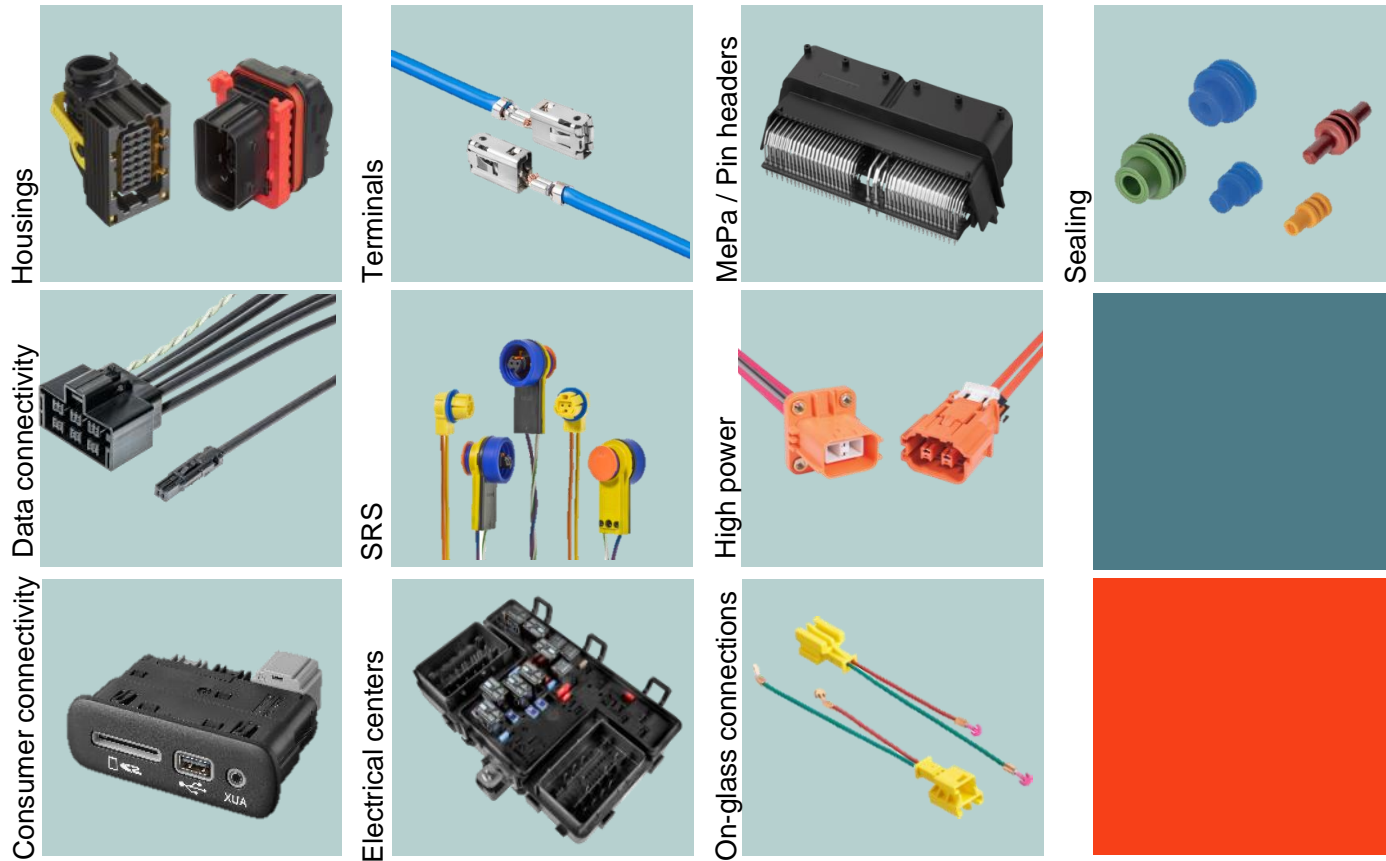
# Advanced technology drives connection system evolution

Consumer demand and regulatory driven

<p><b>Next generation architecture challenges</b></p>	 <p> <b>Safety</b></p>	 <p> <b>Electrification</b></p>	 <p> <b>Connectivity</b></p>	 <p> <b>Miniaturization</b></p>
<p><b>Technology drivers</b></p>	<p>Detection and mitigation Addressing driver distraction Improving reaction time</p>	<p>Fuel economy improvements Emissions reduction Electric/Hybrid vehicle penetration</p>	<p>“Always Connected” consumers Smart phone users Linkage to safety</p>	<p>More content Architectural complexity</p>

Technology focused on megatrends drives market growth

# A comprehensive product portfolio

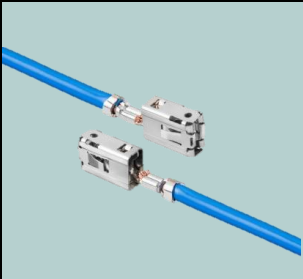


**10 strategic product lines aligned with market needs, trends, and growth opportunities.**

Housings



Terminals



MePa / Pin headers



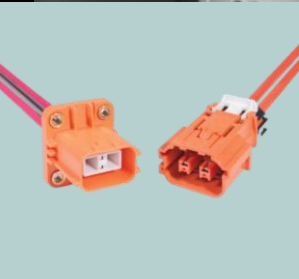
Sealing



Data connectivity



High power



**6 product lines**  
available as  
off-the-shelf  
solutions for  
heavy duty  
applications.



Cabin  
*Interior*



Chassis &  
Engine  
Compartment  
*Exterior*



On-Engine  
*Harsh*

Covering **all major applications**,  
from unsealed in-cab to  
sealed on-engine.


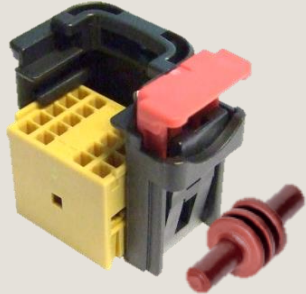

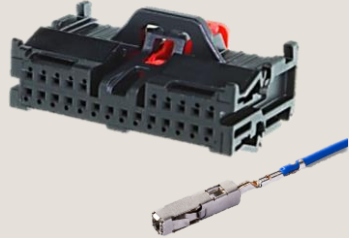

# Housings & Terminals



# Connection system: housings, terminals, sealing

One of the industry's most complete connection system portfolios. Available for device and in-line connections for most vehicle applications, with various terminal type options.



Segments						
	<b>Powertrain &amp; Engine Compartment</b>	<b>Active &amp; Passive Safety</b>	<b>Body &amp; Chassis</b>	<b>Multimedia</b>	<b>Interior</b>	<b>Terminal Options</b>
Applications	<ul style="list-style-type: none"> <li>• Engine sensors</li> <li>• Fuel injectors</li> <li>• Wiper systems</li> <li>• Cruise control</li> <li>• Engine control module</li> </ul>	<p><b>Active:</b></p> <ul style="list-style-type: none"> <li>• Anti-lock braking system / electronic stability control</li> <li>• Electronic park brake</li> <li>• Traction control</li> </ul> <p><b>Passive:</b></p> <ul style="list-style-type: none"> <li>• Passenger occupant detection system</li> <li>• Sensing diagnostic module</li> </ul>	<ul style="list-style-type: none"> <li>• Seat systems</li> <li>• Ride control</li> <li>• Power steering</li> <li>• External lighting</li> <li>• Door controls</li> <li>• Mirror features</li> <li>• Body control module</li> </ul>	<ul style="list-style-type: none"> <li>• Radio</li> <li>• Speakers</li> <li>• Amplifiers</li> <li>• Rear seat entertainment</li> <li>• Navigation</li> <li>• Telematics</li> </ul>	<ul style="list-style-type: none"> <li>• Climate control</li> <li>• Multifunction switch</li> <li>• Ambient lighting</li> <li>• Accessory power outlet</li> <li>• Overhead systems</li> <li>• Clusters</li> </ul>	<ul style="list-style-type: none"> <li>One-piece</li> <li>Two-piece</li> <li>Ring</li> <li>Bus bar</li> <li>Specialty</li> </ul>

# SAE/USCAR-2 performance key & Aptiv design indicators key

Performance	Temperature		Vibration			Sealing		
	Class	Ambient Temperature Range	Class	Common Name	Typical Application	Class	Common Name	
Performance	T1	-40°C to +85°C	V1	Chassis Profile	Components on sprung portions of vehicle not coupled to Engine	S1	Unsealed	
	T2	-40°C to +100°C	V2	Engine Profile	Components coupled to Engine with severe vibration possible	S2	Sealed	
	T3	-40°C to +125°C	V3	Severe On-Engine	Components subject to severe vibration	S3	Sealed (w/high pressure spray)	
	T4	-40°C to +150°C	V4	Extreme Vibration	Used as needed to correlate to extreme vibration areas			
Design	BB Box & Blade		PS Pin & Sleeve		TL Tangless		T Tanged	
							U Universal Cavity	

# OCS™

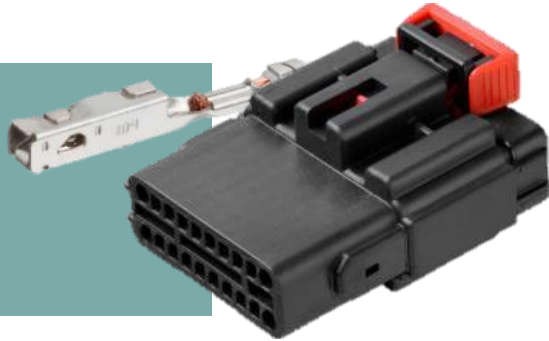
BB

TL

U

## Connection System Family

### Cabin *Interior*



### Chassis & Engine Compartment *Exterior*



### Family benefits

- Interchangeable industry mating interface
- Optimal standard-duty performance at optimal cost
- Application versatility

### Key features

- CPA capability for additional lock assurance
- Punchable strain reliefs
- Thumb grip for easier connector unmating
- Connector lock overstress protection to prevent lock relaxation
- Polyester resins for enhanced audible click, dimensional stability
- Positive forward stop in cavity to prevent terminal push through
- Terminals manufactured of high grade copper alloy
- Optional wire dress / back shell

### Available Configurations

<b>Blade Configurations</b>	0.5, 0.64, 1.2, 1.5, 2.8, Mixed
<b>Cavity Configurations</b>	2-96 way
<b>Genders</b>	Male and Female
<b>Connector Sealing</b>	Sealed or Unsealed
<b>Terminal Type</b>	Tangless (Clean Body)
<b>Terminal Sealing</b>	Mat or Cable seal
<b>Terminal Plating</b>	Tin or Silver
<b>Cable Size</b>	0.13-5.0mm <sup>2</sup> on copper, aluminum-ready

### Performance

Temperature	T3
Vibration	V2
Sealing	S3

Up to

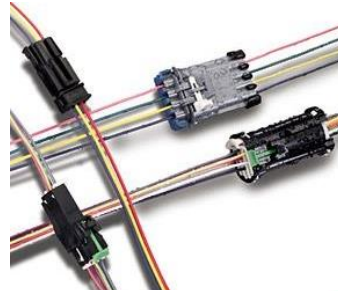
# Metri-Pack™

BB

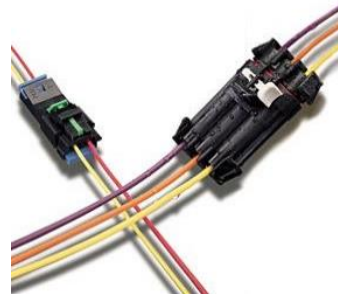
T/TL

## Connection System Family

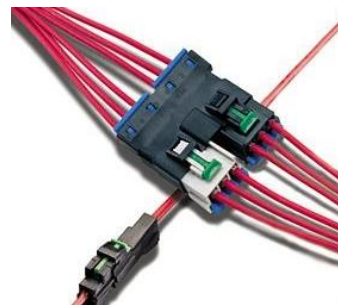
Cabin  
*Interior*



Chassis & Engine  
Compartment  
*Exterior*



On-engine  
*Harsh*



### Family benefits

- Long-standing footprint leadership
- Optimal heavy-duty performance at optimal cost
- Superior durability
- Application versatility

### Key features

- Strength and stability of terminals help assure correct alignment
- CPA and TPA for superior connection reliability
- Validated to SAE J2030, Volvo specs and other CV industry standards

### Available Configurations

Blade Configurations	1.5, 2.8, 4.8, 6.3, 8.0, Mixed
Cavity Configurations	2-12 way
Genders	Male and Female
Connector Sealing	Sealed or Unsealed
Terminal Type	Tanged or Tangless
Terminal Sealing	Cable seal or Pull-to-Seat Mat
Terminal Plating	Tin, Silver, or Gold
Cable Size	0.35-5.0mm <sup>2</sup>

### Performance

Temperature **T4**

Vibration **V3**

Sealing **S2**

Up to

# APEX™

BB

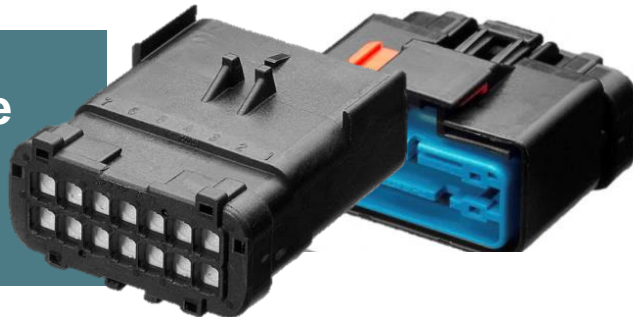
TL

## Connection System Family

### Cabin *Interior*



### Chassis & Engine Compartment *Exterior*



### On-engine *Harsh*



### Family benefits

- Top-of-the line performance
- Highest current rating among competitors
- Ergonomic design

### Key features

- High conductivity copper alloy
- Raised duel rib contact surface and spring protection for resistance against stress relaxation
- CPA capability for additional lock assurance
- Pre-assembled for efficient harness assembly
- Optional wire dress / back shells
- ErgoMate™ axial mechanical assist mating feature for ergonomic mating available on 24-way (55-way in development)

### Available Configurations

<b>Blade Configurations</b>	1.2, 1.5, 2.8, Mixed
<b>Cavity Configurations</b>	2, 3, 4, 6, 10, 14, 16, 24 way
<b>Genders</b>	Male and Female
<b>Connector Sealing</b>	Unsealed or Sealed
<b>Terminal Type</b>	Two-piece Tangless
<b>Terminal Sealing</b>	Cable seal or Mat seal
<b>Terminal Plating</b>	Tin, Silver, or Gold
<b>Cable Size</b>	0.5-4.0mm <sup>2</sup>

### Performance

Temperature **T4**

Vibration **V3**

Sealing **S3**

Up to

# CTCS™

BB

T

U

## Connection System Family

### Cabin *Interior*



### Chassis & Engine Compartment *Exterior*



### On-engine *Harsh*



### Family benefits

- Application versatility
- Unparalleled reliability and performance
- Designed for the transportation market

### Key features

- Superior terminal design with high pre-loaded stainless steel spring reduces relaxation of terminal base body
- Additional connector shielding for protection against debris ingress
- Pre-staged locking mechanism
- Mounting flexibility: panel, strap/clip, pass thru bracket

### Available Configurations

<b>Blade Configurations</b>	1.5, 2.8, 6.3, Mixed
<b>Cavity Configurations</b>	2-62 way
<b>Genders</b>	Male and Female
<b>Connector Sealing</b>	Sealed or Unsealed
<b>Terminal Type</b>	Tanged
<b>Terminal Sealing</b>	Cable seal
<b>Terminal Plating</b>	Tin, Silver, or Gold
<b>Cable Size</b>	0.08-6.0mm <sup>2</sup>

### Performance

Temperature **T4**

Vibration **V4**

Sealing **S3**

Up to

# HES™

PS

U

## Connection System Family

**Cabin**  
*Interior*



**Chassis & Engine  
Compartment**  
*Exterior*



### Family benefits

- Interchangeable industry mating interface
- Superior protection against environmental forces
- Designed to outperform competition

### Key features

- Terminal designed for lower insertion forces
- 3-rib design for better sealing capability, up to 50% improvement
- Specialized finger design to eliminate terminal unseat
- Frontward/backward compatibility
- Sonic welded design provides 360° of contact to withstand high vibration
- Validated to J2030

### Available Configurations

<b>Blade Configurations</b>	1.0, 1.6, 2.4mm
<b>Cavity Configurations</b>	19, 21, 23, 29, 31, 47 way
<b>Genders</b>	Male and Female
<b>Connector Sealing</b>	Sealed
<b>Terminal Type</b>	Pin
<b>Terminal Sealing</b>	Mat seal
<b>Terminal Plating</b>	Nickel or Gold
<b>Cable Size</b>	0.35-6.0mm <sup>2</sup>

### Performance

Temperature **T4**

Vibration **V4**

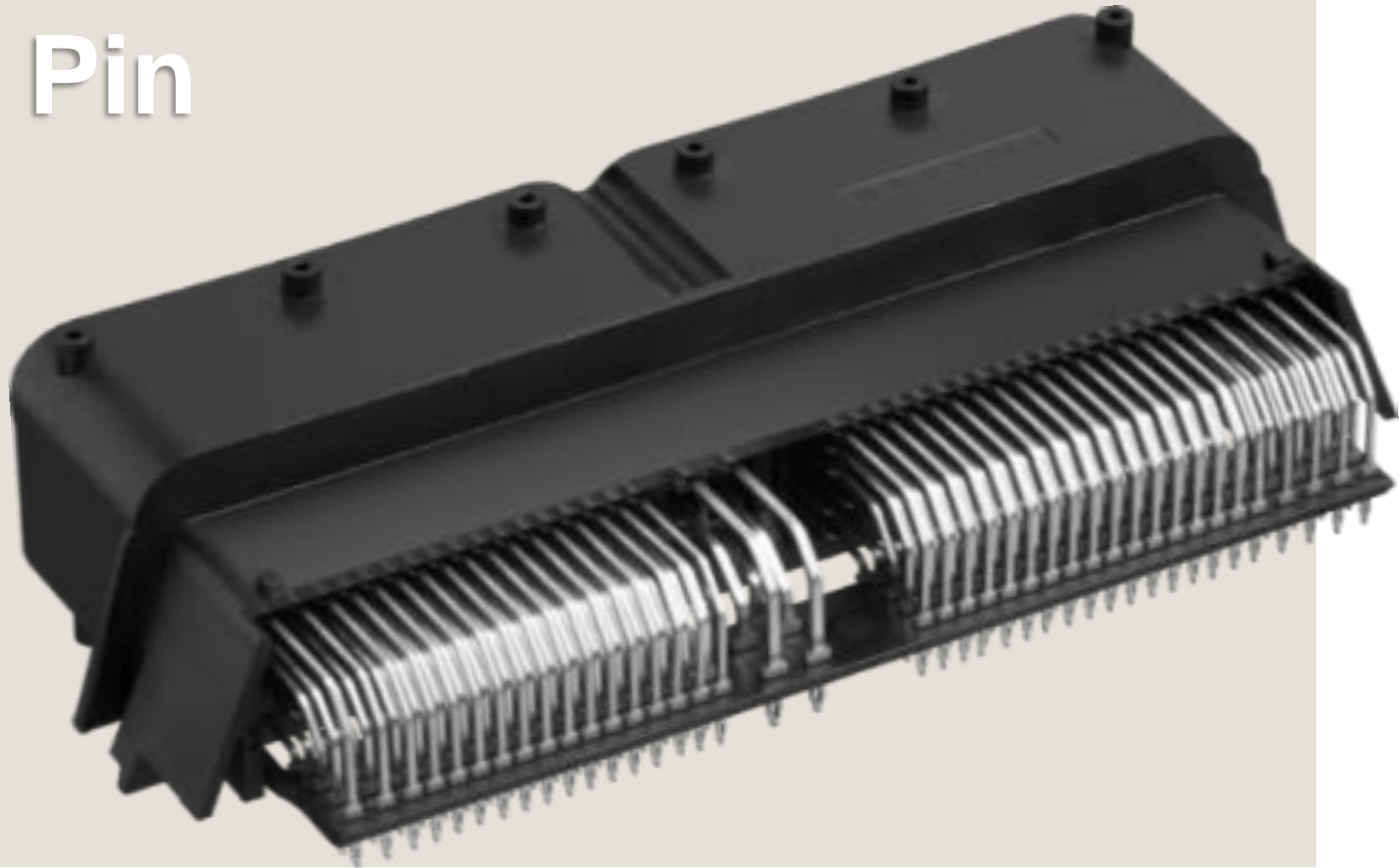
Sealing **S3**

Up to

# Connection systems performance comparison

	T1	T2	T3	T4	
V1					
V2					OCS (S3)
V3					M/P (S2) APEX (S3)
V4					CTCS (S3) HES (S3)

# Mechatronic Packages & Pin Headers



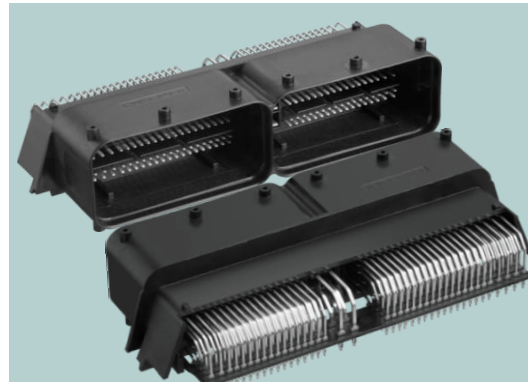
# Mechatronic packages and pin headers



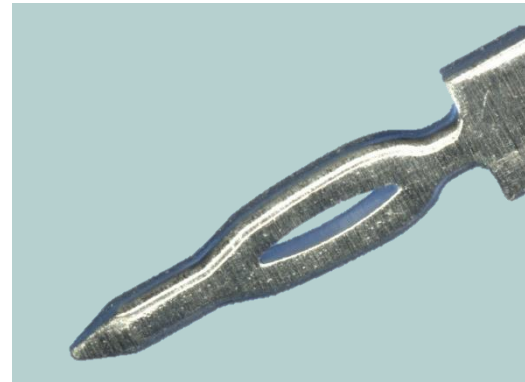
Segments



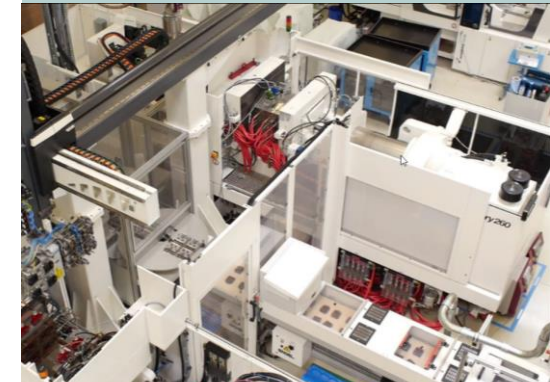
**Mechatronic Packages**



**Pin Headers**



**Press-fit Based Pins**



**Assembly Technology**

Applications

Pin count @ 2 ~ 100 pins  
Product outline > PCB dimension  
Includes other mechanical functions

- ABS & ESC housings
- Radar & Lidar housings
- Sensor housing (pressure, acceleration)
- Air management (TPS cover, sensor)
- Fuel supply (injector headers)
- Sub systems
- Transmission
- Exhaust treatment

Pin count 2 to 300+  
Product outline < PCB dimension

- Engine control
- Body & security
- Comfort
- Passive safety
- Steering
- Data ports

0.40, 0.60 & 0.80 product family

- Engine management (ECUs)
- Restraint controller (SDMs and PODS)
- Radar housings (SRR, MRR)
- Other modules (Body controller, Seat Modules)
- In-house high speed stamping

Automated manufacturing capabilities

- Globally aligned processes for best-in-class production capabilities
- Tailored to customer & product
- Complex over molding & multi-component molding
- Highly integrated assembly solutions
- Fully automated EoL inspection




# High Speed Data Cable Assemblies



# Data connectivity: high speed cable assemblies

A complete line of data connectivity products enabling the linkage of vehicle occupants with the vehicle environment. Seamlessly transmitting gigabits of data.

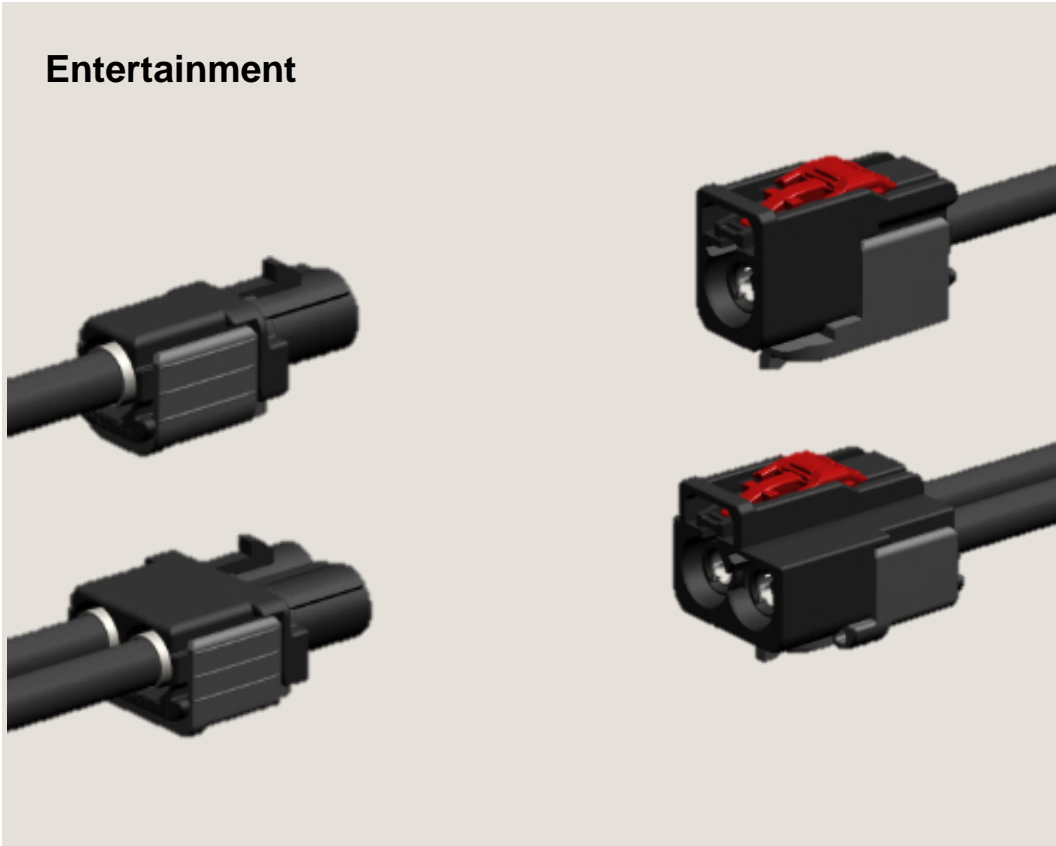


Segments	 <b>Multicore Links</b>	 <b>Coax Links</b>	 <b>2-wire Links</b>
Applications	<ul style="list-style-type: none"><li>• USB Standard A / mini B</li><li>• USB / LVDS / multi-protocol connections</li><li>• Data rates up to 2.5Gbps</li><li>• Camera &amp; infotainment</li></ul>	<ul style="list-style-type: none"><li>• Fakra stamped &amp; formed sealed and unsealed</li><li>• RF Antennas</li><li>• LVDS / APIX connections</li><li>• MiniCoax with optimized package size &amp; performance</li></ul>	<ul style="list-style-type: none"><li>• AMEC: Unshielded 100Mbps / shielded 1Gbps Ethernet</li><li>• H-MTD: Shielded 1G/5G/10G Ethernet</li><li>• High data rates for ADAS / Autonomous driving</li></ul>

# FAKRA

## RF/Coax Connector Assembly

### Entertainment



### Family benefits

- Supports high frequencies
- Offers variety of applications
- Serviceable

### Key features

- Stamped & formed terminals
- Anti-stubbing technology
- Secondary locks on terminals and housings
- Optional CPA
- Audible, tactile feedback

### Available Configurations

<b>Cavity Configurations</b>	1 & 2 way
<b>Genders</b>	Male and Female
<b>Connector Sealing</b>	Sealed (1-way) or Unsealed (1- & 2-way)
<b>Cable Orientation</b>	180° or 90°
<b>Cable Size</b>	2.0-6.0mm
<b>Characteristic Impedance</b>	50 Ohm connectors 50-125 Ohm cables
<b>Supported Cable Types</b>	RG174LL/316/DACAR462, 1.5 DS, RTK031/DACAR302, 2.0 DS, RG59Mini, RG58LL, RG59, RG62/71, RG62M/71M

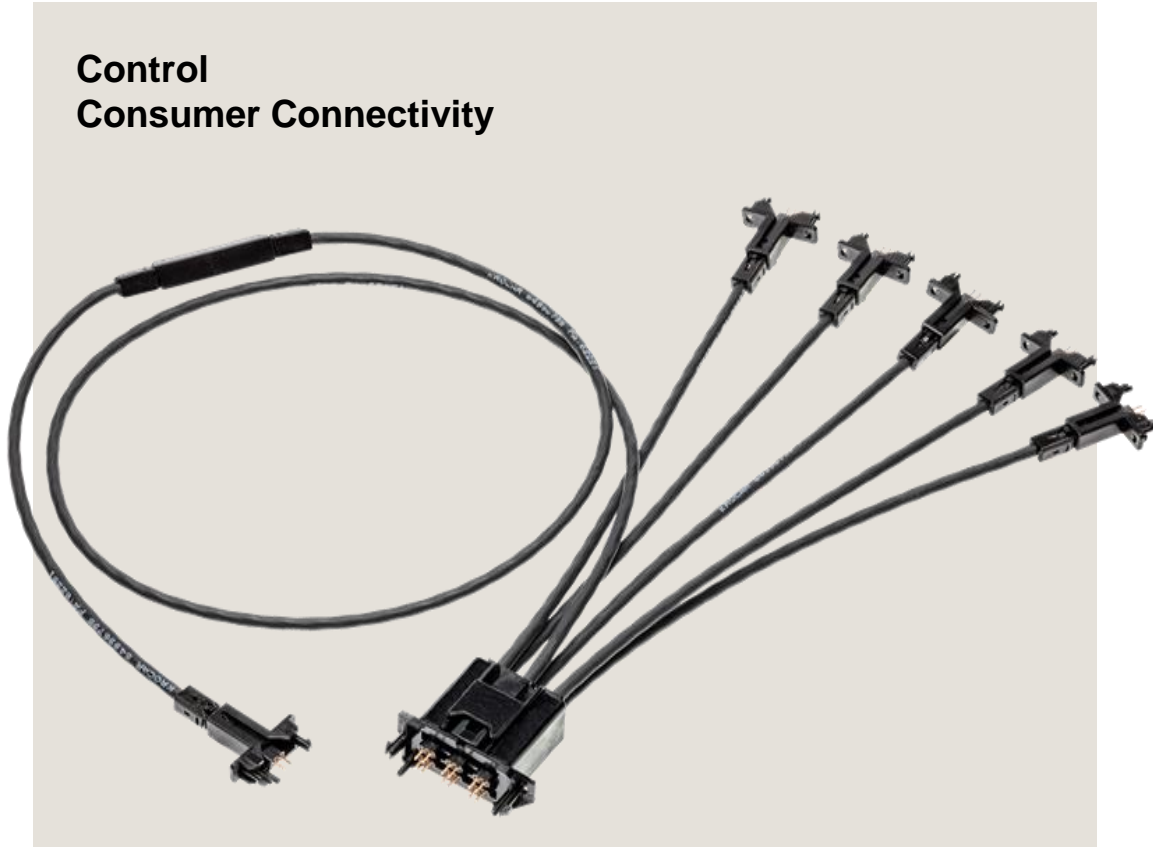
### Applications

Antenna/RF  
Camera/LVDS  
Ethernet, including power  
over coax

# AMEC (2019)

## Ethernet Connector Assembly

### Control Consumer Connectivity



### Family benefits

- Footprint commonality
- High data rates
- Scalable design

### Key features

- Meets Open Alliance BroadR-Reach and IEEE requirements
- Scalable design supports 100 Mb/s and 1 Gb/s data rates
- Supports both unshielded twisted pair and shielded twisted pair cable types
- Single footprint for unsealed straight (180), right angle (90), unshielded and shielded headers (sealed footprint is different)
- Scalable header shielding. Add shielding when using shielded cables and in 6-Way header at 1 Gb/s for isolation
- Pre-qualified cables for 100 Mb/s and 1 Gb/s
- Uses standard 0.50 terminals
- Optional CPA

### Available Configurations

<b>Cavity Configurations</b>	1, 4, 6 way
<b>Connections</b>	Inline and headers
<b>Sealing</b>	Sealed or Unsealed
<b>Cable Orientation</b>	180° or 90° headers 180° connectors
<b>Cavity Configurations</b>	1, 4, 6 way
<b>Connections</b>	Inline and headers
<b>Sealing</b>	Sealed or Unsealed

# High Power



# High power / high voltage electrification

Leading the way in vehicle electrification solutions for OEMs and device manufacturers globally.



Segments	 <p><b>High Voltage Auxiliary Modules</b></p>	 <p><b>High Voltage Power Conversion</b></p>	 <p><b>Chargers and Charging Cables</b></p>	 <p><b>Charging Inlets</b></p>
Applications	<p>Applications up to 40A, 1000V Integrated HVIL 2W-4W systems, inline, splice systems</p> <ul style="list-style-type: none"> <li>• DC converter</li> <li>• On-board charger</li> <li>• Electric air conditioning</li> <li>• Electric heater</li> <li>• Coolant heater control</li> </ul>	<p>Applications up to 250A, 1000V Integrated HVIL 2W, 3W systems, pass-thru systems</p> <ul style="list-style-type: none"> <li>• Inverter</li> <li>• Drive motors</li> <li>• Motor generator unit</li> <li>• Battery</li> </ul>	<p>Global certifications Global vehicle interfaces Temperature protection grid plug Charging up to 11KW power</p> <ul style="list-style-type: none"> <li>• Mode 2 EVSE</li> <li>• Mode 3 cable assemblies</li> <li>• Interface pigtails for charging</li> </ul>	<p>All global vehicle interfaces Temperature sensing Custom designs for OEM needs</p> <ul style="list-style-type: none"> <li>• SAE J1772</li> <li>• IEC type II</li> <li>• GB-T</li> <li>• Combo 1/Combo 2 fast charge</li> </ul>

# RCS™

## High Power Connection System

### Power Conversion



### Family benefits

- Compact solution
- Easy to assemble and cost effective
- Long industry leadership

### Key features

- Compact mate-assist system for low mating force and smaller packaging
- Unique header sealing design that keeps it sealed even when disconnected
- Round terminal system for additional packaging space savings
- External braiding system for greater cost effectiveness

### Available Configurations

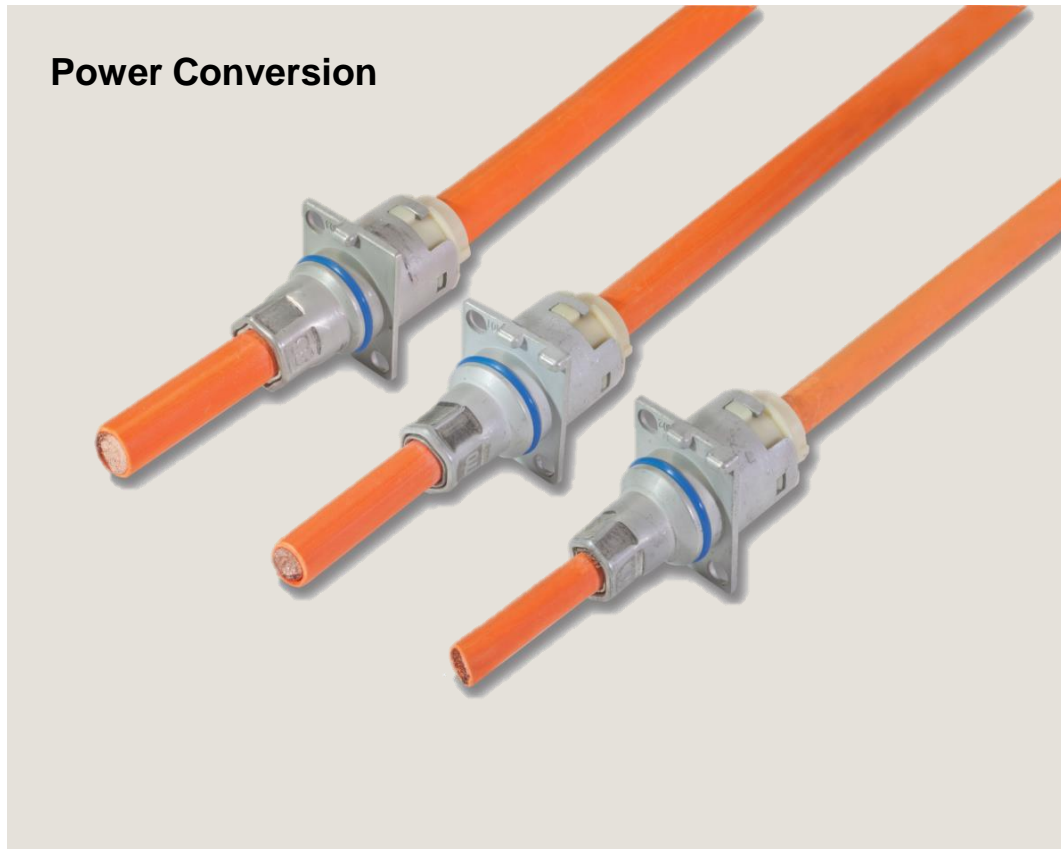
Terminal Size	8mm round
Cavity Configurations	2 & 3 way
Genders	Male and Female
Connector Sealing	Sealed: IP67, IP69K
Interlock Function	Integrated HVIL
Cable Orientation	180° or 90°
Terminal Plating	Silver
Cable Size	35 -50mm <sup>2</sup>

### Performance

Temperature	T4
Vibration	15g
	230A@70C
	1000V DC
	Up to

# Metal Pass-Thru's

## High Power Connection System



### Family benefits

- Robust and highly compact connection
- Cost effective solution for e-motors

### Key features

- Multiple keying indexes for easier connection management
- Full metal body for high vibration capability
- Ring terminal bolted to device for better withstanding against vibration
- Individually shielded cables for filtering against EMI and RFI

### Available Configurations

Connection Type	Ring terminal
Cavity Configurations	1-way
Indexes	6-8 different indexes
Sealing	Sealed : IP67, IP69K
Cable Orientation	180°
Cable Size	25, 35, 50mm <sup>2</sup> (70, 95mm <sup>2</sup> in development)

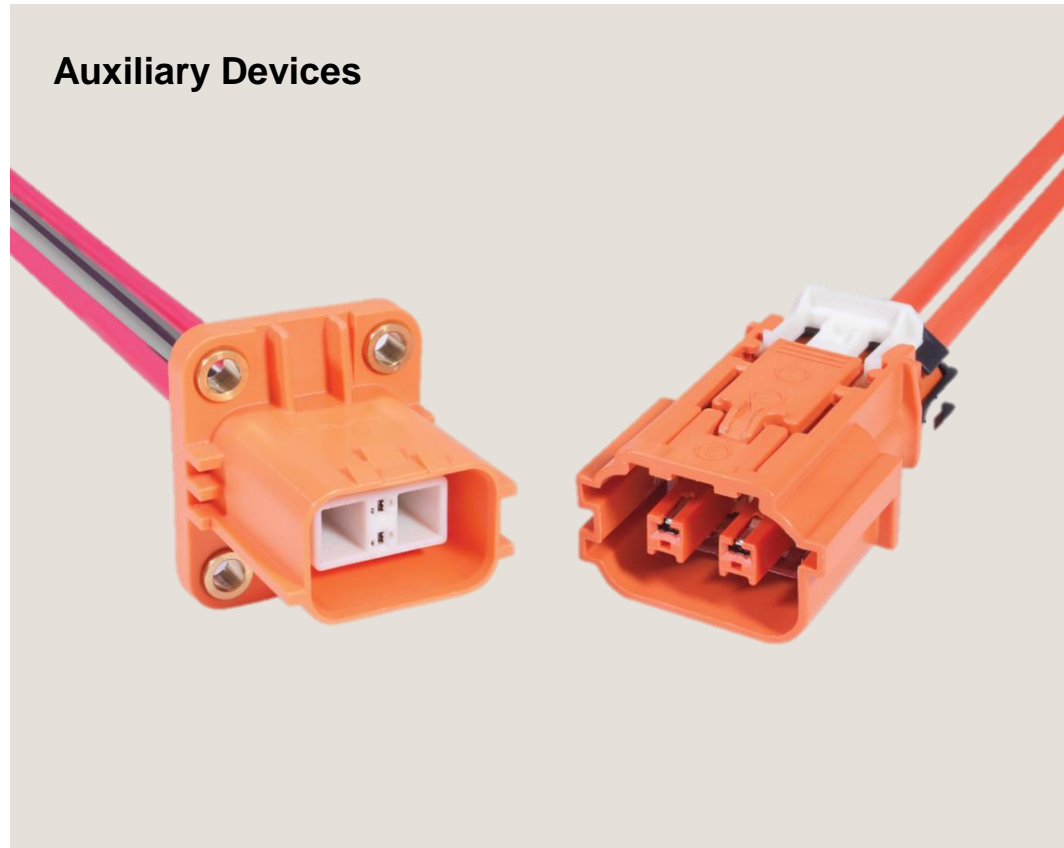
### Performance

Temperature	T4
Vibration	V4
	250A@70C
	1000V DC

Up to

# HV280

## High Power Connection System



### Family benefits

- Compact solution
- Easy installation
- Broad application coverage

### Key features

- Multiple HVIL configurations to meet multiple OEM requirements for HVIL management
- Individual shielded cables for protection against EMI and RFI
- Rated to up to 1000V DC for heavy duty applications

### Available Configurations

Terminal Size	2.8mm
Cavity Configurations	2-way
Genders	Male and Female
Connector Sealing	Sealed: IP67, IP69K
Interlock Function	Integrated HVIL
Cable Orientation	180° (90° in development)
Terminal Plating	Silver
Cable Size	2.5 – 5mm <sup>2</sup>

### Performance

Temperature	T3
Vibration	
	40A@85C
	1000V DC
	Up to

# Couplers & Cordsets

## Chargers and Charging Cables



### Family benefits

- Long-standing footprint leadership
- Covering all regions' standards
- Preferred by leading EV OEMs

### Key features

- Robust and ergonomic design for optimal performance in various environments
- Expertise in terminal system fueling high terminal reliability
- Split terminal contact design allows for low engage and low resistances
- Simplified internal design for reduction in manufacturing time and complexity
- Innovative sealing system to protect critical crimps and connection components
- Covering all regional standards NA-J1772, EU- IEC62196, China-GBT
- Available in Mode 2 and Model 3
- Mode 2 with In Cable Control Box (ICCB) for direct grid connection
- Mode 3 cable assembly for charging station connections

# Charging Inlets

## Charging



### Family benefits

- Long-standing footprint leadership
- Covering all regions' standards
- Preferred by leading EV OEMs

### Key features

- Vehicle interface through three global standards
- Wall/infrastructure side according to European & Chinese standards.

# Aptiv 48V

## High Power Connection System



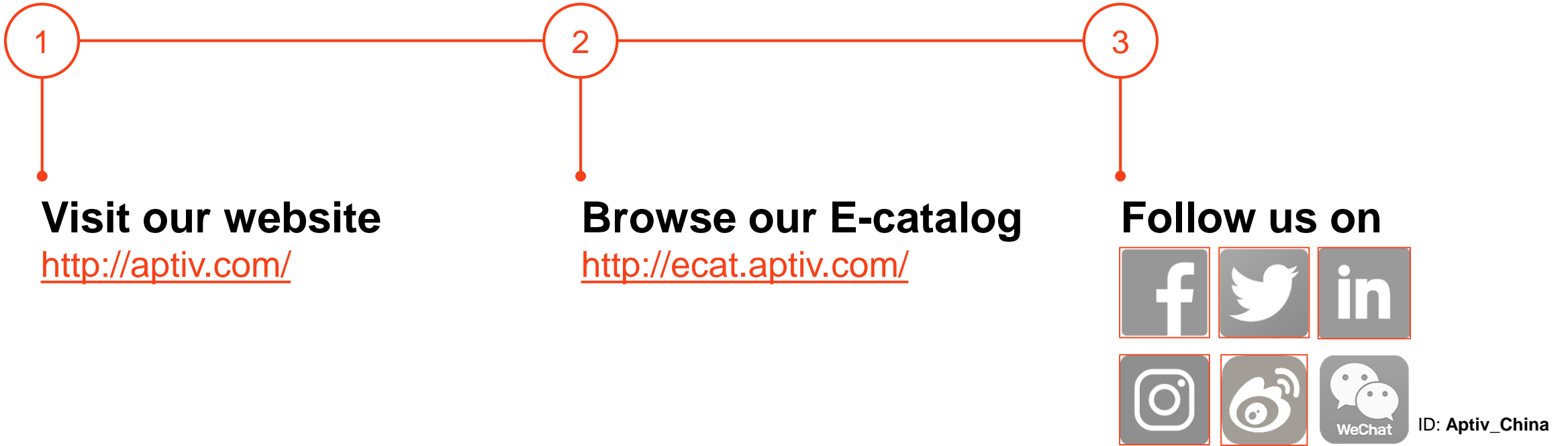
### Family benefits

- 4x the voltage, 4x the power
- Best value electrification
- Improved functionality, better performance, greater efficiency

### Key features

- Sealed for robust connections at 48V
- Ring terminal interface provides high current and vibration capabilities
- Side-by-side connector bodies mate together
- Ideal solution for 48V electrical centers, power distribution boxes, start-stop systems, E-turbo, battery, active suspension, and BSG units

# To learn more about us



# Thank you.