



# HYBRID & ELECTRIC VEHICLES

Components for Infrastructure, Connectivity and On-Board Systems



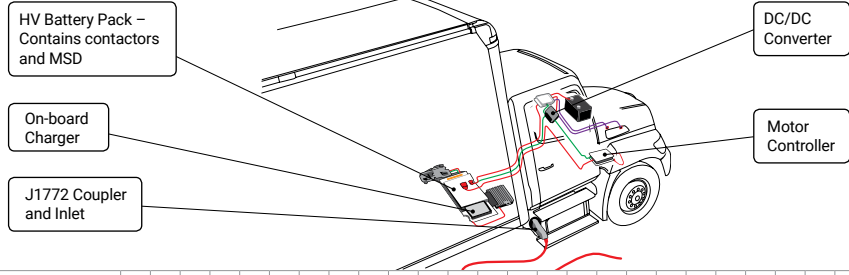
## High-Voltage Connectors and Components for EV OEMs

TTI stocks the premier electrical components that hybrid and electric vehicle manufacturers and suppliers need to keep production lines running. From plug-in hybrids, to medium duty trucks, charging stations, and motor controllers, TTI Transportation Specialists have a full range of interconnect, passive and electromechanical components in stock and available to sell. Contact your local branch today at 1.800.CALL.TTI or visit us online at [ttiinc.com/hev-ev-vehicle](http://ttiinc.com/hev-ev-vehicle).



Reach your local sales team at 1.800.CALL.TTI

# Plug-in Vehicle Overview



	ALL SENSORS	AMPHENOL	API DELEVAN	API TECH/SPECTRUM	AVX	BOURNS	CORNELL DUBILIER	EATON	HONEYWELL	KEMET	KINGBRIGHT	KOA SPEER	LITTELFUSE	MURATA	NICHICON	OHMITE	OMRON	OSRAM	PANASONIC	PIHER SENSING SYSTEMS	PULSE	ROHM SEMICONDUCTOR	SENSATA/BEI	SGS SENSORTECH	SSI TECHNOLOGIES	TDK	TE CONNECTIVITY	TOSHIBA	TT ELECTRONICS	UNITED CHEMI-CON	VISHAY	WIMA	
<b>Discretes, Passives &amp; Thermal Management</b>																																	
<b>Capacitors</b>																																	
Aluminum Snap-in Capacitor							◆		◆					◆													◆			◆	◆		
DC Link Film Capacitor				◆			◆		◆										◆								◆				◆	◆	◆
EDLC/Supercapacitor				◆			◆	◆	◆						◆				◆								◆				◆	◆	◆
High-voltage Ceramics			◆	◆					◆					◆													◆				◆	◆	◆
Large Can/Screw Terminal Capacitor							◆		◆					◆													◆				◆	◆	◆
Smoothing Film Capacitor				◆			◆		◆					◆					◆								◆				◆	◆	◆
X-Y Safety Capacitor							◆		◆										◆								◆				◆	◆	◆
<b>Circuit Protection</b>																																	
Automotive Fuses							◆						◆																				
Electrical Fuse							◆					◆	◆																				
Fuse Holder/Automotive Fuse Blocks							◆					◆	◆																				
NTC Thermistor				◆									◆	◆					◆								◆						◆
Power Distribution Module							◆																										
<b>Discrete Semiconductors</b>																																	
IGBT													◆										◆						◆	◆	◆		
MOSFET																			◆				◆						◆	◆	◆		
Rectifier						◆							◆						◆				◆					◆	◆	◆	◆	◆	
Silicon Carbide (SiC)													◆						◆				◆					◆	◆	◆	◆	◆	
<b>Inductors</b>																																	
High-current Inductors		◆	◆	◆	◆		◆		◆				◆						◆		◆					◆		◆		◆	◆	◆	
<b>Optoelectronics</b>																																	
Displays (OLED, LCD, 7 Segment, Panel Meter)													◆										◆									◆	
LED													◆					◆	◆				◆						◆	◆	◆	◆	◆
Optocoupler												◆																◆	◆	◆	◆	◆	◆
<b>Power Supply</b>																																	
AC-DC Power Supply													◆																				
DC-DC Power Converter													◆										◆										
<b>Resistors</b>																																	
Current Sense/Shunt					◆							◆			◆				◆			◆							◆	◆	◆	◆	
High-power Thick Film Chip					◆							◆			◆				◆			◆							◆	◆	◆	◆	
High-temperature Thick Film Chip					◆							◆			◆				◆			◆							◆	◆	◆	◆	
High-voltage Thick Film Chip					◆							◆			◆				◆			◆							◆	◆	◆	◆	
<b>Thermal Management</b>																																	
Heatsink															◆																		
<b>Relays</b>																																	
High-current Contactors																		◆	◆								◆						
High-voltage Contactors																		◆	◆								◆						
Plug-in Relays												◆							◆	◆							◆						
PCB Relays												◆							◆	◆							◆						
Precharge Relays (PCB and Plug-in Version)																		◆	◆								◆						
<b>Sensors</b>																																	
CO2 and Other Gases		◆							◆														◆										
Current								◆	◆																			◆					
Fluid Level								◆				◆											◆				◆						
Gyroscope and Accelerometer								◆					◆										◆				◆						
Hall Effect: Speed and Position								◆													◆		◆	◆			◆						
Humidity/Combination (MEMS)		◆						◆															◆				◆						
Inclinometer/Tilt								◆						◆			◆						◆				◆						
Inertial Measurement Unit								◆					◆										◆				◆						
Infrared		◆						◆				◆						◆	◆	◆			◆				◆			◆	◆	◆	◆
Load Cell/Force								◆																			◆						
Mass Air Flow								◆																			◆						
Pressure	◆	◆						◆																			◆						
Resolvers								◆					◆														◆						
Rotary Position								◆												◆			◆				◆						
Temperature (Thermistor, RTD)	◆		◆				◆		◆			◆	◆	◆									◆	◆			◆	◆	◆	◆	◆	◆	◆

	AMPHENOL	APTIV/DELPHI	ITT CANNON	KOSTAL	MOLEX	OMRON	PANASONIC	PHOENIX CONTACT	TE CONNECTIVITY
<b>EV Suppliers by Product</b>									
J1772 Coupler	◆	◆	◆					◆	◆
J1772 Inlet		◆	◆					◆	
J1772 CCS		◆	◆					◆	
Contactors						◆	◆		◆
MSD	◆								◆
HV 0-100A Connectors	◆	◆	◆						◆
HV 200A Connectors	◆	◆		◆	◆				◆
HV 300A Connectors	◆				◆				◆
HV 400A* Connectors	◆								◆
Pass-through Systems	◆	◆	◆		◆				◆
EVSE Board Products							◆	◆	◆

	INFRASTRUCTURE	VEHICLE OEM	BATTERY PACK OEM	ELECTRIC MOTOR OEM	MOTOR CONTROLLER OEM	ON-BOARD CHARGER OEM	DC/DC CONVERTER
<b>EV Market Segment by Product</b>							
J1772 Coupler	◆						
J1772 Inlet		◆					
J1772 CCS		◆					
Contactors		◆	◆	◆			
MSD			◆	◆			
HV 0-100A Connectors			◆	◆	◆	◆	◆
HV 200A Connectors			◆	◆	◆	◆	◆
HV 300A Connectors			◆	◆	◆	◆	◆
HV 400A* Connectors			◆	◆	◆		
Pass-through Systems		◆	◆		◆	◆	
EVSE Board Products		◆					

Connection System	Term Type	Current	Voltage	Shield
Amphenol APT/HVPT	Ring		1000	Internal
Amphenol ePower	8mm-11mm Pin/Soc	200-400	1000	Internal
Amphenol ePower-Lite	3.6mm Pin/Soc	70	1000	Internal
Amphenol Powerlok	4.0mm-14mm Pin/Soc	40-500	1000	Internal
Amphe-Power	2.4mm - 9.1mm Pin/Soc	63 - 300	1000	External*
Amphe-Push-Pull	5.7mm - 14.0mm Pin/Soc	120 - 500	1000	External*
Amphenol Radlok	3.6mm - 12.0mm Pin/Soc	70 - 400	1000	None
Amphenol Rhino 38999	4.8mm - 23.1 Pin/Soc	85 - 1000	630	Internal
Amphenol Surlok	3.6mm - 14.0mm Pin/Soc	70 - 500	1000	None
Amphenol UPC	9.1mm - 12mm Pin/Soc	250 - 400	1000	Internal
Aptiv/Delphi HV150	1.5mm Box/Blade	16	600	None
Aptiv/Delphi APEX HV280	2.8mm Box/Blade	35	750	External
Aptiv/Delphi HV280	2.8mm Box/Blade	40	600	Internal
Aptiv/Delphi APEX HV950	9.5mm Box/Blade	70	750	None
Aptiv/Delphi HV1000	10mm Box/Blade	145	600	Internal
Aptiv/Delphi HV2000	20mm Box/Blade	250	600	Internal
Aptiv/Delphi RCS800 & 890	8mm Pin/Soc	230	1000	External
Aptiv/Delphi Pass-through	Ring	n/a	600	Internal
ITT APD	2.4mm Pin/Soc	29	500	None
ITT Ring Tongue	Ring	n/a	900	Internal
KOSTAL PLK 14.5	14.5mm Box/Blade	235	600	Internal
Molex Imperium	8mm-14mm Pin/Soc	230-400	1000	Internal
Molex Maxloc Plus	8mm-14mm Pin/Soc	230-400	1000	Internal
Molex Maxloc (pass-thru)	Ring	n/a	1000	Internal
TE Connectivity EV600	Screw Terminal	600	28-1000	Internal
TE Connectivity HVA280	2.8mm Box/Blade	30	600-750	Internal
TE Connectivity HVA630	6.3mm Box/Blade	70	600	Internal
TE Connectivity HVA950	9.5mm Box/Blade	90	600	Internal
TE Connectivity HVP800	8mm Pin/Soc	200-250	850	Internal
TE Connectivity HVP1100	11mm Pin/Soc	320	750	Internal
TE Connectivity IPT	Ring	n/a	800	Internal





# Why Buy from the Specialist in Electronic Component Distribution?

Founded in 1971, TTI has steadily grown to become the world's leading interconnect, passive, electromechanical and discrete component distributor in the industry. The company was founded on the premise that passive component purchasing could be made more efficient by offering product specialization, customer-driven service, and proprietary supply chain solutions.



## Knowledgeable Product Experts

Specialization allows TTI product managers to provide much better product insight to support your manufacturing from design through production. TTI Specialists' commitment to our customers is key to our continued success.



## Broader and Deeper Inventories

TTI maintains extensive component inventories, stocking more than 500,000 part numbers in North America and over 850,000 globally – that's more interconnect, passive, electromechanical and discrete inventory available than from any other source.



## AIM - Advanced Inventory Management Platform

TTI's proprietary supply chain system is specifically designed for managing IP&E products and partnerships with premier manufacturers. This allows us to provide the BOM coverage necessary to deploy comprehensive solutions that reduce total cost of ownership and mitigate line down risk.

## Quality and Reliability

TTI is the first distributor to have all global warehouse locations ISO registered and currently are certified to ISO 9001 with AS9100C and ISO 14001 in North America, ISO 9001, EN 9100, ISO 14001 and EN 9120 in TTI Europe and ISO 9001 in TTI Asia.

**Year after year, customers rate our inventory availability, on-time delivery and accuracy among the very best in the industry – call your local TTI Specialists at 1.800.CALL.TTI and discover why.**



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