

cannon veam

# Heavy and Off Road Vehicle Product Selection Guide



**ITT**

# cannon veam

## We Connect When it matters most

1

### CABIN TO CHASSIS INTERFACE

**PRODUCT SOLUTIONS:**  
CA COM, Trident, APD,  
APD Interface  
APD Modular Interface, IT.

2

### ENGINES

**PRODUCT SOLUTIONS:**  
CA Bayonet, CA COM,  
APD 7 Way, IT, VPT.

3

### LIGHTING SYSTEMS

**PRODUCT SOLUTIONS:**  
Sure Seal, CTC, SLC,  
APM, IT, VRPC.

PRO  
Tr



Resistant to shock, vibration, water and other fluids, humidity, mud, dust, heat, cold and virtually anything else you can throw at them. Built for the toughest, dirtiest jobs that make our modern way of life possible. ITT Cannon and Veam connectors withstand the most demanding environments. A vast range of applications means solutions must be versatile—but never at the expense of reliability. Our family of connectors is designed to deliver the ultimate in flexibility, durability and performance.

4

**JUNCTION BOXES**

**PRODUCT SOLUTIONS:**  
Trident, CA Bayonet, CA COM, IT.

5

**CONTROL BOXES**

**PRODUCT SOLUTIONS:**  
Trident, APD, CA Bayonet, CA COM, IT, KPTC

6

**SELECTIVE CATALYTIC REDUCTION**

**PRODUCT SOLUTIONS:**  
APD

7









**BATTERIES**

**PRODUCT SOLUTIONS:**  
APD, CA Bayonet





		SURE SEAL	TRIDENT	APD	CTC	Cannon IT Series	SLC
APPLICATIONS		<ul style="list-style-type: none"> <li>• Meterological Station</li> <li>• Signal Lighting</li> </ul>	<ul style="list-style-type: none"> <li>• Engines</li> <li>• Controllers/ Signal Connecting</li> <li>• Harnessing for Dashboard of Crane</li> <li>• Relais</li> <li>• Cabin Chassis Interface</li> <li>• Harnessing for Steering Column Module</li> <li>• Cabin Accessories / In-line Interconnects</li> <li>• Control Panel</li> <li>• Control Box</li> <li>• Junction Box</li> </ul>	<ul style="list-style-type: none"> <li>• Battery Connection</li> <li>• Controllers / Signal Connecting</li> <li>• Selective Catalytic Reduction</li> <li>• Power Transmission</li> <li>• Control Box</li> <li>• Engines</li> </ul>	<ul style="list-style-type: none"> <li>• Chassis Cable Harness</li> <li>• Controllers / Signal Connecting</li> <li>• Lighting Systems</li> <li>• Cabin Accessories / In-line Interconnects</li> <li>• Sensors</li> <li>• Seat and Window Control</li> <li>• Wipers / Under Hood Electronics</li> </ul>	<ul style="list-style-type: none"> <li>• Engine &amp; transmission harnessing</li> <li>• Lighting systems</li> <li>• Controllers</li> <li>• Signal interface</li> <li>• Cabin harnessing/accessories</li> <li>• Seat &amp; window controls</li> <li>• Wipers/under hood electronics</li> <li>• LCD displays &amp; accessories</li> <li>• Sensors (electrical, pressure, temperature)</li> </ul>	<ul style="list-style-type: none"> <li>• Jake brake</li> <li>• Lighting Systems</li> <li>• Cabin accessories / In-line Interconnects</li> </ul>
GENERAL	Standards / Connector Specifications	-	EN61984 / UL 1977	ISO 15170	Consult Factory	SAE J2030	SAE J2030 USCar
	Fire & Smoke standards	-	UL 94 V-0 and I2/F2 according to NFF 16-101 (snap-together series)	-	-	UL94 V-0	-
ELECTRICAL	Number of Circuits	2 to 10	4 to 48	1 to 51	2, 4, 8, 16, 24	2, 3, 4, 6, 8, 12	5, 8, 10, 15
	Max. Operating Voltage	48 V DC	250 V AC - 500 V DC/AC	48 V DC High Voltage: 500 V DC/AC	250 V AC	250 V AC	300 V AC
	Max. Dielectric Withstanding Voltage	1200 V AC	2000 V AC - 3500 V AC	1000 V AC High Voltage: 3500 V AC	1550 V AC	1550 V AC	1000 V AC
CONTACTS	Max. Current Rating	17 A	30 A	245 A	16 A	13A	13 A
	EMI/RFI shielding	No	Yes	No	No	No	No
	Wire range AWG	20 to 14	26 to 12	22 to 0	24 to 16	24 to 12	20 to 16
	Wire Range mm <sup>2</sup>	0,4 - 1,5	0,14 - 4,0	0,35 - 50	0,25 - 1,5	0,25 - 2,50	0,50 - 1,5
	Contact plating	Tin / Silver	Tin / Silver / Gold	Tin / Silver / Gold	Tin / Gold	Nickel / Silver / Gold flash	Tin / Gold
	Crimp, machined	Yes	Yes	Yes	Yes	24-14 AWG	Yes
	Crimp, stamped	Yes	Yes	Yes	Yes	20-12 AWG	Yes
	Solder	No	Yes	Yes	No	NA	No
	PCB	No	Consult factory	Yes	Consult Factory	NA	Yes
	Coax	No	Yes	No	No	NA	No
	Ethernet Interface	No	No	No	No	NA	No
	Fiber Optic Interface	No	No	No	No	NA	No
	Power and Signal Layouts	No	Yes	No	No	No	No
	MECHANICAL	Mating cycles (max.)	100	500	50	200	200 (stamped contacts) 500 (machined contacts)
Max. shock resistance (g's)		50	50	50	50	50	100
Max. vibration resistance		500 m/s <sup>2</sup> at 10-55 Hz	100 m/s <sup>2</sup> at 10-500 Hz	100 m/s <sup>2</sup> at 10-500 Hz	100 m/s <sup>2</sup> at 10-500 Hz	20 G's at 10 to 2000 Hz	100 m/s <sup>2</sup> at 10-2000 Hz
Mechanical coding		No	Yes	Yes	Yes	Up to 5 coding	Yes
Type of coupling		Ring-Snap	Bayonet	Bayonet	Snap-Lock	Wire to wire	Snap-Lock
Configurations / Mounting options	Flange, Inline	Jamnut, Flange	Flange/ Jamnut/ Inline	Inline, Mounting Bracket	-	Inline, Panel Mount	
ENVIRONMENTAL	Temperature range	-40°C to 105°C (-40°F to 221°F)	-55°C to 105°C (-67°F to 221°F)	-40°C to 125°C (-40°F to 257°F)	-55°C to 105°C (-67°F to 221°F)	-55°C to +125 °C C31 (-67°F to +257°F)	-40°C to 150°C (-40°F to 302°F)
	IP rating mated	IP 68 (1 bar/ 12h)	Up to IP67	IP67 / IP69K	Up to IP 69K	IP67, IP68 (1m water with 24H), and IP6K9K	IP68 (0,03 bar / 24h)
	Individual wire sealing	Yes	Grommet	Yes	Grommet	Silicone rubber	Grommet
	Cable jacket sealing	Yes	Yes	Yes	Yes	NA	Yes
	Shell material	NBR	Thermoplastic	Thermoplastic	Thermoplastic	Thermoplastic	Thermoplastic
	Insert material	NBR	Thermoplastic	Thermoplastic	No	Silicone Rubber, PBT	No
SHELL PLATINGS	RoHS Electroless Nickel - Conductive (<48h)	No	Yes	No	No	-	No
	RoHS Zinc Cobalt black - Conductive - (200h)	No	No	No	No	NA	No
	RoHS Zinc Cobalt black, VG approved, Conductive (48h)	No	No	No	No	NA	No
	Cadmium Olive drab - Conductive (500h)	No	No	No	No	NA	No
	RoHS Zinc Cobalt green - Conductive (200h)	No	No	No	No	NA	No
	RoHS Zinc Nickel blue - Conductive (500h)	No	No	No	No	NA	No
	RoHS Black Epoxyurethane varnish - Not conductive (500h)	No	No	No	No	NA	No
Other platings: Consult factory	No	No	No	No	-	No	

STANDARD PRODUCTS							
CA Bayonet	CA-COM	KPTC	APE	APM	CLC	CIR-FRCIR	VRPC
							
<ul style="list-style-type: none"> <li>• Junction Box</li> <li>• Sensors</li> <li>• Control Box</li> <li>• Cabin Chassis Interface</li> <li>• Engines</li> </ul>	<ul style="list-style-type: none"> <li>• Junction Box</li> <li>• Sensors</li> <li>• Control Box</li> <li>• Cabin Chassis Interface</li> <li>• Engines</li> </ul>	<ul style="list-style-type: none"> <li>• Control Box</li> <li>• Control Panel</li> </ul>	<ul style="list-style-type: none"> <li>• ABS Braking Systems</li> </ul>	<ul style="list-style-type: none"> <li>• Switches</li> <li>• Relais</li> <li>• Actuators</li> <li>• Wipers</li> <li>• Engines</li> <li>• Lighting Systems</li> </ul>	<ul style="list-style-type: none"> <li>• GPS systems</li> <li>• Fuel injectors</li> <li>• Cabin accessories / in-line interconnects</li> </ul>	<ul style="list-style-type: none"> <li>• Hybrid Transmission</li> <li>• Control</li> <li>• Control Systems / Units</li> <li>• Power Transmission</li> <li>• Gear Box</li> <li>• Sensors</li> </ul>	<ul style="list-style-type: none"> <li>• Cabin</li> <li>• Wipers</li> <li>• Seats</li> <li>• Lighting Systems</li> </ul>
VG95234 (Where applicable)	Derived from VG95234 / SAE-AS50151 (formerly MIL-DTL-5015)	MIL-DTL 26482 Series 1, VG 95328	-	-	SAE J2030 USCar	VG95234 / MIL-DTL-5015 (where applicable)	NFF 61030
acc. VG95234	acc. VG95234	acc. VG95328	-	-	-	EN 45545-2 NFPA 130	EN 45545-2 NFF 16-101/102
1 to 65	1 to 48	2 to 61	2, 3	4	2, 4	1 to 159	3, 6, 12
50 V AC - 75 V DC (acc. Low Voltage Directive)	50 V AC - 75 V DC (acc. Low Voltage Directive)	50 V DC	48 V DC	16 V DC	300 V AC	4200 V DC - 3000 V AC	380 V AC - 500 V DC
4500 V AC	4500 V AC	2300 V AC	1000 V DC	1000 V AC	1000 V AC	7000 V AC	3250 V AC
245 A	245 A	22 A	13 A	5 A (at 70°C)	5 A	350 A	16 A
Yes	Yes	Yes	No	No	No	Yes	No
26 to 0	26 to 0	24 to 16	18 to 16	20 to 18	20 to 16	26 to 4/0	14 to 26
0,14 - 50	0,14 - 50	0,2 - 2,0	0,75 - 1,5	0,4 - 0,75	0,50 - 1,5	0,15 - 120	0,25 - 2,5
Gold / Silver	Silver	Gold	Silver	Tin	Tin / Gold	Gold / Silver	Gold / Tin
Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
No	No	No	No	Yes	Yes	No	Yes
Yes	Yes	Yes	No	No	No	Yes	No
Yes	Yes	Yes	No	No	Yes	Yes	No
No	No	No	No	No	No	Yes	No
No	No	No	No	No	No	See CIR M12 family	No
No	No	No	No	No	No	See Fiber Optic family	No
Yes	Yes	No	No	No	No	Yes	No
500	500	500	25	25	25	2000	500
50	50	50	-	-	100	50	50
200 m/s <sup>2</sup> at 10-2000 Hz	200 m/s <sup>2</sup> at 10-2000 Hz	200 m/s <sup>2</sup> at 10-2000 Hz	100 m/s <sup>2</sup> at 10-500 Hz	-	100 m/s <sup>2</sup> at 10-2000 Hz	200 m/s <sup>2</sup> at 10-2000 Hz	200 m/s <sup>2</sup> at 10-2000 Hz
Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Bayonet	Bayonet	Bayonet	Push-On	Snap-in	Clip-Lock	Bayonet	Snap-in
Flange, Jamnut, others	Flange, Jamnut, others	Flange, Jamnut, others	Inline	Inline	Inline, Panel Mount	Flange, Jamnut, others	Panel Mount
-55°C to 125°C (-67°F to 257°F) optional 200°C (392°F)	-55°C to 125°C (-67°F to 257°F)	-55°C to 125°C (-67°F to 257°F)	-40°C to 125°C (-40°F to 257°F)	-40°C to 105°C (-40°F to 221°F)	-40°C to 150°C (-40°F to 302°F)	-40°C to 125°C (-40°F to 257°F)	-40°C to 100°C (-40°F to 212°F)
IP67 / IP68 (1 bar/16h) / IP69k	CA-COM Bayonet IP67 / IP68 (1 bar / 16h) CA-COM Threaded IP65	IP68 (0,2 bar / 48h)	IP69K	IP50	IP68 (0,1bar / 4h)	IP67	IP20 / IP67
Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Aluminium	Aluminum, Zinc, Nickel Plated	Aluminium	Thermoplastic	Thermoplastic	Thermoplastic	Aluminum, Stainless Steel, Marine Bronze	Thermoplastic
CR, FKM	CR	CR	No	PBT	No	Flame Retardant Rubber, Viton, Silicone Rubber	Thermoplastic (Flame Retardant Grommet)
Yes	Yes	Yes	No	No	No	Yes	No
Yes	No	Yes	No	No	No	Yes	No
Yes	No	No	No	No	No	No	No
Yes	No	Yes	No	No	No	Yes	No
Yes	No	Yes	No	No	No	Yes	No
No	No	No	No	No	No	Yes	No
No	No	No	No	No	No	Yes	No



CUSTOM PRODUCTS

MODULAR APD INTERFACE	APD INTERFACE	GEAR BOX CONNECTOR	APD 7-WAY WITH GROMMET	VPT	SENSOR CONNECTOR	VA900

APPLICATIONS	<ul style="list-style-type: none"> <li>• Cabin Chassis Interface</li> <li>• Control Systems / Units</li> </ul>	<ul style="list-style-type: none"> <li>• Cabin Chassis Interface</li> <li>• Control Systems / Units</li> </ul>	<ul style="list-style-type: none"> <li>• Power Transmission</li> <li>• Gear box</li> </ul>	<ul style="list-style-type: none"> <li>• Engine</li> </ul>	<ul style="list-style-type: none"> <li>• Engine</li> </ul>	<ul style="list-style-type: none"> <li>• Sensors</li> </ul>	<ul style="list-style-type: none"> <li>• Hybrid Traction Systems</li> </ul>
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GENERAL	ELECTRICAL	COMACTS	MECHANICAL	ENVIRONMENTAL	SHELL PLATINGS
Standards / Connector Specifications					
Fire & Smoke standards					
Number of Circuits					
Max. Operating Voltage					
Max. Dielectric Withstanding Voltage					
Max. Current Rating					
EMI/RFI shielding					
Wire range AWG					
Wire Range mm <sup>2</sup>					
Contact plating					
Crimp, machined					
Crimp, stamped					
Solder					
PCB					
Coax					
Ethernet Interface					
Fiber Optic Interface					
Power and Signal Layouts					
Mating cycles (max.)					
Max. shock resistance (g's)					
Max. vibration resistance					
Mechanical coding					
Type of coupling					
Configurations / Mounting options					
Temperature range					
IP rating mated					
Individual wire sealing					
Cable jacket sealing					
Shell material					
Insert material					
RoHS Electroless Nickel - Conductive (<48h)					
RoHS Zinc Cobalt black - Conductive - (200h)					
RoHS Zinc Cobalt black, VG approved, Conductive (48h)					
Cadmium Olive drab - Conductive (500h)					
Rohs Zinc Cobalt green - Conductive (200h)					
RoHS Zinc Nickel blue - Conductive (500h)					
Black Epoxyurethanic varnish - Not conductive (500h)					
Other platings: Consult factory					

# We Connect

## When it matters most

For more than a century, ITT has developed innovative connector solutions for the world's harshest environments. With facilities in the United States, Germany, Italy, Mexico, China and Japan, each with its unique strengths, we offer our customers interconnect solutions that are truly Engineered for Life.

In addition to this truly global footprint, we offer highly specialized segmented industry expertise. We have a proven track record as an industry leader in harsh-environment vehicle applications. This has equipped us with the knowledge needed to continue to produce extremely advanced, resilient and reliable connectors for our customers' most challenging applications.

## Global Interconnect Solutions for the Heavy and Off-Road Vehicle Industry.

### The ITT Cannon and Veam difference

- Global capabilities & local support
- Proven application expertise
- A century of interconnect leadership
- A committed innovator & business partner

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### About ITT

ITT is a diversified leading manufacturer of highly engineered critical components and customized technology solutions for the transportation, industrial, and energy markets. Building on its heritage of innovation, ITT partners with its customers to deliver enduring solutions to the key industries that underpin our modern way of life. ITT is headquartered in Stamford, Connecticut, with employees in more than 35 countries and sales in approximately 125 countries. For more information visit [itt.com](http://itt.com).



Connect with your ITT Cannon and Veam representative today or visit us at [ittcannon.com](http://ittcannon.com)

## Connect with the experts


ITT Cannon and Veam brands are world leaders in the design and manufacture of highly engineered interconnect solutions for the harshest of environments.



### Why ITT

ITT is a focused multi-industrial company that designs and manufactures highly engineered critical components and customized technology solutions. ITT's Cannon brand is a leading global manufacturer of connector products serving international customers in aerospace, defense, medical, industrial and transportation end markets. ITT's Connector business, which also includes the Veam and BIW Connector Systems brand, manufactures and supplies a variety of connectors and interconnects that make it possible to transfer data, signal and power in an increasingly connected world.

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