

cannon

CTC Series

Environmentally sealed
Cable to Cable interconnects



ITT

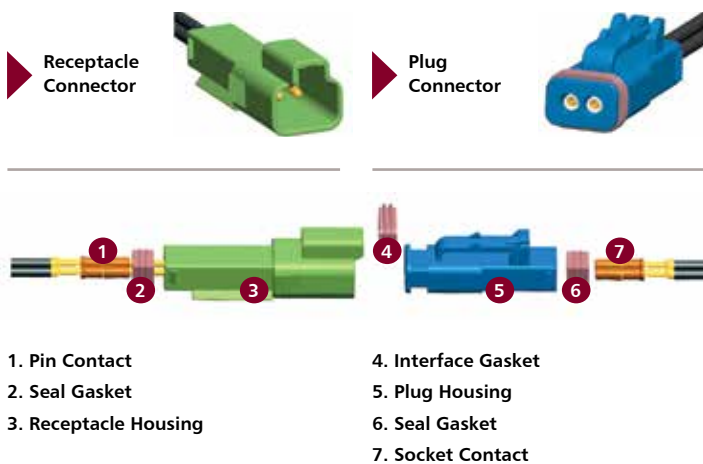
ENGINEERED FOR LIFE

Cable to Cable interconnects for the harshest environments

The CTC Series was designed as a high-performance, cost-effective solution for use in harsh environmental applications where reliable signal circuits are critical to operating performance.

CTC is designed for use in multiple areas such as the engine, transmission, chassis or cab of Heavy Equipment vehicles. CTC is also suitable for a wide variety of applications that have demanding interconnect architectures such as agriculture, automotive, passenger transportation, alternative energy and outdoor electronics.

The CTC Series connectors contain superior levels of environmental sealing. They utilize ITT Cannon's Trident T2P contact technology. The plug features an integral coupling latch that provides tactile and audible feedback during coupling. The rugged thermoplastic receptacle is designed as an inline for cable to cable application and is supplied with an integral "V"-groove to accept mounting, clips and brackets.



T2P Contact System



Applications

The CTC Series is suitable for a wide variety of Heavy Equipment applications.



Example CTC Application Areas

- Engine harnesses
- Lighting Systems
- Controllers
- Signal Interface
- Cabin accessories
- Seat and window controls
- Wipers/Under hood electronics
- LCD displays & accessories

Specifications and dimensions subject to change.

The connector design incorporates an integral rubber sealing system that ensures excellent waterproof performance. The 2, 4, 8 and 12-way variants are water sealed to IP67. The 16 and 24-way variants are sealed up to IP69K with end caps. Connector housings are manufactured with thermoplastic material that is not only robust, but has excellent dielectric/mechanical properties and is RoHS compliant.

The sealing system is comprised of a front and rear rubber, multi-sealing and a perimeter against environmental ingress.

The durable end gasket can withstand contact insertion and withdrawal 3 times before replacement is required. The reliable T2P contacts are formed from copper alloy and stainless steel to ensure a highly reliable electrical connection.

Performance/Test Specification

Contact Current Rating	Up to 13A, Up to 16A with High Conductivity Contacts
Operation Voltage	Up to 250V ac rms
Wire Range	Contacts will accept wire ranges of 14 thru 26 AWG
Operating temperature	-55°C to +105°C (-67°F to +221°F)
Durability	Stamping contacts up to 200 mating cycles, Machining contacts up to 500 mating cycles
Environmental Sealing	Up to IP67. For 16 & 24 way up to IP69K
Flammability	UL 94 V-0
Dielectric Voltage	1550V ac for 60 seconds
Thermal Shock	-55°C to +125°C (-67°F to +257°F), 5 cycles
Physical Shock	50g's peak, 3axes, 11millisecond duration half-sine pulse, no loss of continuity > 1μsec
Vibration	10g's peak, 10-500 Hz, 9Hours, no loss of continuity > 1μsec
Salt Spray	48hours
Temperature Endurance	1000 hours at 125°C (+257°F); Insulation Resistance > 100MΩ
Humidity Steady State	RH 90-95%, 40°C (+104°F), 504 hours; Insulation Resistance > 100MΩ
Moisture Resistance	10 Cycles; Insulation Resistance > 100MΩ
Product Material	
Housing	Thermoplastic
Seal Gasket	Silicone Rubber
Interface Gasket	Silicone Rubber
Contacts	Copper alloy & stainless steel. Tin or gold plated

Specifications and dimensions subject to change.

ITT Cannon

ITT Interconnect Solutions' Cannon brand is a world leader in the design and manufacture of highly engineered connector solutions for Heavy Equipment markets. With 100 years of expertise in connectors, ITT Cannon has a proven track record of innovation and industry firsts.

Today our extremely durable and highly sealed connectors enable our Heavy Equipment and Transportation customers to deliver the ultimate in performance. Our customers depend on us to solve their most critical problems, and we focus on partnering with them to find solutions to their unique challenges.

Amazing things happen when great things connect.



cannon

Product layout and part number 2, 4, 8, 12, 16, 24-way. The connectors offer visual coding by different color, Black & Gray.

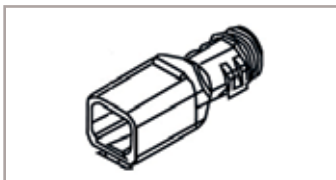
P/N		Description	Picture	Layout	P/N		Description	Picture	Layout
Black	Gray				Black	Gray			
132015-0071	132015-0116	2-way plug			132015-0065	132015-0122	12-way plug		
132015-0072	132015-0117	2-way receptacle			132015-0066	132015-0123	12-way receptacle		
132015-0069	132015-0118	4-way plug			132015-0074	132015-0114	16-way plug		
132015-0070	132015-0119	4-way receptacle			132015-0073	132015-0115	16-way receptacle		
132015-0067	132015-0120	8-way plug			132015-0075	132015-0112	24-way plug		
132015-0068	132015-0121	8-way receptacle			132015-0076	132015-0113	24-way receptacle		

Specifications and dimensions subject to change.

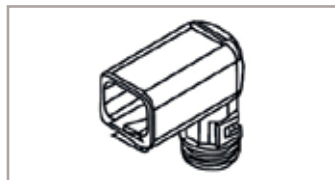
Backshells

The CTC Series backshells are designed to snap onto and mate with all standard plug and receptacle sides. The rigid, durable thermoplastic backshells offer excellent protection and allow convoluted tubing to nest within the rear of the backshell.

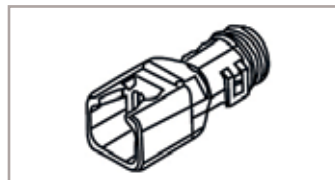
Two standard straight (180°) and right angle (90°) versions are under development. We can also design and produce customized backshells to meet specific customer requirements.



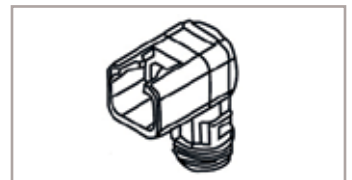
Receptacle 180°



Receptacle 90°



Plug 180°



Plug 90°

Specifications and dimensions subject to change.

Mounting Clips

Mounting clips are used to mount CTC Series connectors. To meet varied customer requirements the clips are available in various configurations and in Steel with zinc plating or stainless steel. The outer diameter of the mounting screw hole is adjustable to customer requirements.



Straight mounting direction/stainless



Side mounting direction/ Steel with zinc plating


CTC utilizes the highly engineered Trident T2P contact to provide a simple, reliable and economic cable-to-cable connector solution.

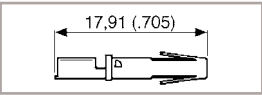
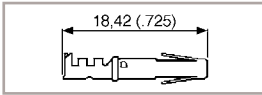
Contact Data Rating

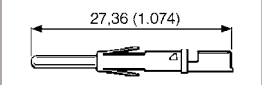
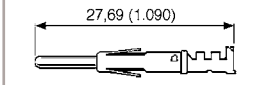
	T2P Two piece formed (stamped) contact For up to 200 mating cycles Full support Tooling available		T3P Three piece machined contact For up to 500 mating cycles Full support tooling available		
Contact Type	Standard Crimp	High conductivity Crimp	Machined Crimp	Solder Cup	Flow Solder (PCB)
					
Technical and Performance Data					
Support wire size	AWG14 to 26	AWG14 to 26	AWG14 to 26	AWG14 to 26	
Current rating	13A	16A	13A	13A	13A
Mechanical endurance	Up to 200 insertions	Up to 200 insertions	Up to 500 insertions	Up to 500 insertions	Up to 500 insertions
Body material	Brass	Copper Alloy	Brass	Brass	Brass
Retention spring material	Stainless Steel	Stainless Steel	Beryllium Copper	Beryllium Copper	Beryllium Copper
Plating Availability					
Tin	yes	yes	yes	yes	yes
Gold	0.75µm Gold Flash	-	0.40µm (pin) 0.75µm (socket)	0.40µm (pin) 0.75µm (socket)	0.40µm (pin) 0.75µm (socket)

Stamped Contact Information - Standard Brass Material

- 13 A current rating
- Three plating styles available
- Separate retention spring
- Up to 200 mating cycles
- Wide range of wire sizes
- Full support tooling available



Size 14 to 16 AWG, No Insulation Grip
Size 16 to 26 AWG, Insulation Grip

Wire range mm ²	Wire Size	Contact	Part Number Pack (100)			Part Number Reeled (3000)			Insulation Diameter	Strip Length
			Tin Plating	Gold Flash	0.75mm (30µ in.) Gold plating	Tin Plating	Gold Flash	0.75mm (30µ in.) Gold plating		
0,14 - 0,25	26-24 AWG	Pin	192990-0020	192990-0080	192900-0448	192990-2510	192990-2650	192900-0406	0,89 (.035) - 1,58 (.062)	3,95 (.155)±0,25(.009)
0,14 - 0,25	26-24 AWG	Socket	192990-0030	192990-0090	192900-0452	192990-2550	192990-2690	192900-0410	0,89 (.035) - 1,58 (.062)	3,95 (.155)±0,25(.009)
0,32 - 0,50	22-20 AWG	Pin	192990-0040	192922-1460	192900-0447	192990-2500	192990-2640	192900-0405	1,17 (.046) - 2,08 (.081)	3,95 (.155)±0,25(.009)
0,32 - 0,50	22-20 AWG	Socket	192990-0050	192922-1470	192900-0451	192990-2540	192990-2680	192900-0409	1,17 (.046) - 2,08 (.081)	3,95 (.155)±0,25(.009)
0,75 - 1,50	18-16 AWG	Pin	192990-0060	192990-0100	192900-0446	192990-2490	192990-2630	192900-0404	2,00 (.078) - 2,70 (.106)	3,95 (.155)±0,25(.009)
0,75 - 1,50	18-16 AWG	Socket	192990-0070	192990-0110	192900-0450	192990-2530	192990-2670	192900-0408	2,00 (.078) - 2,70 (.106)	3,95 (.155)±0,25(.009)
1,50 - 2,50	16-14 AWG	Pin	192990-1240	192990-1220	192900-0445	192990-2480	192990-2620	192900-0403	Without insulation support	5,60 (.220)±0,25(.009)
1,50 - 2,50	16-14 AWG	Socket	192990-1250	192990-1230	192900-0449	192990-2520	192990-2660	192900-0407	Without insulation support	5,60 (.220)±0,25(.009)

Specifications and dimensions subject to change.

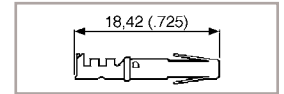
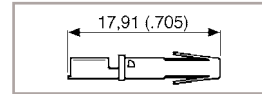
Stamped Contact Information – High Conductivity Material

- 16 A current rating
- Recommended for elevated temperatures
- High conductivity copper alloy with tin plating
- For use with standard crimp tooling
- Up to 50 mating cycles

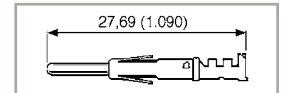
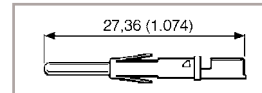
- ▶ Size 14 to 16 AWG, No Insulation Grip
- ▶ Size 16 to 26 AWG, Insulation Grip



▶ Socket



▶ Pin



			Part Number Pack (100)		Part Number Reeled (3000)			
Wire Range mm ²	Wire Size	Contact	Tin Plating	Tin Plating	Insulation Diameter	Strip Length		
0,14 - 0,25	26-24 AWG	Pin	192900-0122	192900-0120	0,89 (.035) - 1,58 (.062)	3,95 (.155)±0,25 (.009)		
0,14 - 0,25	26-24 AWG	Socket	192900-0123	192900-0121	0,89 (.035) - 1,58 (.062)	3,95 (.155)±0,25 (.009)		
0,32 - 0,50	22-20 AWG	Pin	192900-0126	192900-0124	1,17 (.046) - 2,08 (.081)	3,95 (.155)±0,25 (.009)		
0,32 - 0,50	22-20 AWG	Socket	192900-0127	192900-0125	1,17 (.046) - 2,08 (.081)	3,95 (.155)±0,25 (.009)		
0,75 - 1,50	18-16 AWG	Pin	192900-0002	192900-0000	2,00 (.078) - 2,70 (.106)	3,95 (.155)±0,25 (.009)		
0,75 - 1,50	18-16 AWG	Socket	192900-0003	192900-0001	2,00 (.078) - 2,70 (.106)	3,95 (.155)±0,25 (.009)		
1,50 - 2,50	16-14 AWG	Pin	192900-0005	192900-0004	Without insulation support	5,60 (.220)±0,25 (.009)		
1,50 - 2,50	16-14 AWG	Socket	192900-0007	192900-0006	Without insulation support	5,60 (.220)±0,25 (.009)		

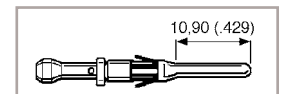
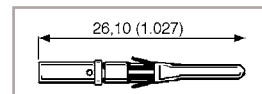
Machined Contact Information

- 13 A current rating
- Separate contact and retention spring
- Up to 500 mating cycles
- Variety of plating options
- Full support tooling available

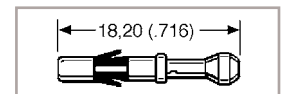
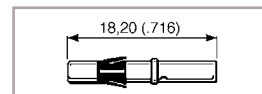
- ▶ Size 16 AWG, No Insulation Grip
- ▶ Size 20 to 26 AWG, Insulation Grip



▶ Socket



▶ Pin



			Part Number Pack (100)					
Wire range mm ²	Wire Size	Contact	Gold Plating (X)	Gold Plating (Y)	Tin Plating	Insulation Diameter	Strip Length	Color Band
0,08 - 0,23	26 AWG	Pin	192991-0101	192991-0100	192991-0102	0,90 (.035) - 1,40 (.055)	5,08 (.200)±0,25 (.009)	Black
0,08 - 0,23	26 AWG	Socket	192991-0054	192991-0042	192991-0048	0,90 (.035) - 1,40 (.055)	5,08 (.200)±0,25 (.009)	Black
0,20 - 0,24	24 AWG	Pin	192991-0093	192991-0092	192991-0094	1,05 (.041) - 1,60 (.062)	5,08 (.200)±0,25 (.009)	Blue
0,20 - 0,24	24 AWG	Socket	192991-0055	192991-0043	192991-0049	1,05 (.041) - 1,60 (.062)	5,08 (.200)±0,25 (.009)	Blue
0,25 - 0,50	22 AWG	Pin	192991-0097	192991-0096	192991-0098	1,60 (.062) - 2,15 (.084)	5,08 (.200)±0,25 (.009)	Red
0,25 - 0,50	22 AWG	Socket	192991-0056	192991-0044	192991-0050	1,60 (.062) - 2,15 (.084)	5,08 (.200)±0,25 (.009)	Red
0,44 - 0,64	20 AWG	Pin	192991-0089	192991-0088	192991-0090	1,60 (.062) - 2,10 (.082)	5,08 (.200)±0,25 (.009)	Green
0,44 - 0,64	20 AWG	Socket	192991-0058	192991-0046	192991-0052	1,60 (.062) - 2,10 (.082)	5,08 (.200)±0,25 (.009)	Green
0,60 - 1,51	16 AWG	Pin	192991-0085	192991-0084	192991-0086	Without insulation support	7,11 (.279)±0,25 (.009)	Black
0,60 - 1,51	16 AWG	Socket	192991-0059	192991-0047	192991-0053	Without insulation support	7,11 (.279)±0,25 (.009)	Black
1,50 - 2,50	14 AWG	Pin	121587-0028	-	-	Without insulation support	7,11 (.279)±0,25 (.009)	White
1,50 - 2,50	14 AWG	Socket	121587-0039	-	-	Without insulation support	7,11 (.279)±0,25 (.009)	White

Specifications and dimensions subject to change.

Application Tooling Information

Hand Tools

For Formed Stamped Contacts



Ratcheted Hand Tool - A range of single action, factory calibrated tools are available to support stamped contacts.

Signal Contact	Part Number
14-16 AWG	121586-5238
16-18 AWG	121586-5237
20-22, 24-26 AWG	121586-5236

Hand Tools

For Machined Contacts



This is a ratcheted, four indent crimp tool that is fully adjustable. They crimp all sizes of machined and coaxial contacts.

Description	Hand Tool P/N	Locator
Machined Crimp	995-0001-585	192990-7600 (Calibrated)1

Extraction Tool



Contacts can readily be removed from the housings using an extraction tool. The tool is placed over the contact and the sleeve rotated slightly as it is pushed home to release the spring. Light pressure on the knob then ejects the contact from the rear of the housing.

Part Number	
For Signal Contact	192922-1450

WARNING

Tooling & Handling: Care must be taken to avoid damage to any component parts of electrical connectors during installation and use. Although there are normally no sharp edges, care must be taken when handling certain components to avoid injury to fingers. Electrical connectors may be damaged in transit to the customers, and damage may result in creation of hazards. Products should therefore be examined prior to installation/use and rejected if found to be damaged.

Mini Applicators

For Stamped Contacts

Mini Applicators are interchangeable modules that will fit into many standard crimping machines. They are available for all sizes of stamped signal contacts.

AWG Size	Part Number
14-16	121586-5240
16-18	121586-5217
20-26	121586-5239

Testing Gauge

For Stamped Contacts

The testing gauge will be helpful to check whether a crimp is ok or not. The contact should be inserted into the test fixture without scratching the test hole (diameter 3.3 mm).

Part Number	
Testing Gauge	317-8675-133

Pneumatic Table Crimp Tool

For Machined Contacts

This Hand Crimp Tool fully meets the requirements of specification MIL-C-22520. The tool produces eight-indent crimp terminations of excellent quality. Together with the bench mount BM-2 and the foot pedal WA-10 it becomes an installed tool facilitating the work: The Hands of the operator are free to insert the contact and the wire and to remove the terminated contact.

Nomenclature	Description	Part Number	AWG
WA27F-CE	Pneumatic Crimp Tool	121586-5067	12-20
WA22F-CE	Pneumatic Crimp Tool	121586-5070	20-32
BM-2	Bench Mount	121586-5068	
WA10	Foot Pedal	121586-5069	

Semi-Automated Crimp Machine HACS-5

For Machined Contacts

With the semi-automated crimp machine HACS-5 machined contacts are terminated fast and reliably. 20 to 25 crimp terminations per minute can be achieved. The user has the choice between automatic and manual operation.

Nomenclature	Description	Part Number
HACS-5	Semi-Automated Crimp Machine	120090-0118

Electrical Data	
Protection Class: IP51	Electrical Power: 240 V ac, 50 Hz

Specifications and dimensions subject to change.

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Connect with the experts

ITT Interconnect Solutions' Cannon brand is a world leader in the design and manufacture of highly engineered connector solutions for Heavy Equipment markets.



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