ITT Cannon SLE Series
Snap Lock Environmental Connectors

HARSH-ENVIRONMENT SNAP LOCK RECTANGULAR CONNECTORS

The ITT Cannon Snap Lock Environmental series (SLE) is an environmentally-sealed, rectangular connector created for printed circuit board (PCB), cable-to-cable or bulkhead applications. SLE connectors are suitable for demanding under-the-hood applications and are user-friendly and easy to assemble, with audible and tactile feedback. SLE connector contacts will handle up to 5 amps continuous at a fully-rated temperature range of -40°C to +125°C. SLE is available as a 19 pin connector and a 28 pin connector. For full details on ITT Cannon SLE series connectors, see the product specifications below.

APPLICATIONS

- Engine electronics
- Instrumentation
- Automotive CPUs

FEATURES

RECTANGULAR CONNECTOR BODIES

The SLE connector's rectangular design is ideally suited for easy printed circuit board (PCB) layouts for both straight off-the-board and right angle applications, since the contacts are precisely arranged in rows.

KEYABLE CONNECTOR BODIES

Four simple, slotted keys and keyways are supplied with the connectors to allow the user to key connector halves. This prevents connectors of the same shell size, mounted in close proximity to each other, from being mated with the incorrect connector and damaging the sophisticated electronic control modules.

CLAMSHELL-STYLE PLUG CABLE CLAMPS FOR ANY CABLE ORIENTATION

Plug cable clamps are ordered as part of the connector and are available in five different styles: up, down, right, left and straight cable exits. This saves space and allows for easy mating in crowded under-the-hood environments. See Create Part Number for more details.

STRONG CONNECTOR SNAP LOCKS

Snap locks are located at either end of the SLE connector. These locks are molded into the connector bodies and lock the halves together when mated. To unmate, just depress the snap locks simultaneously and pull the halves apart.

TECH SPECS

MATERIALS & FINISHES

Shell	High-performance thermoplastic body, silicone wire seals
Contacts	Copper alloy
Platings	Selective gold over nickel plating on mating surface, tin/lead over nickel plating on wire crimp area

ELECTRICAL DATA

Dielectric Withstanding Voltage	1000 Vac rms at sea level
Current Rating	5 Amps continuous at 125°C
Wire Range Sizes	20 - 16 AWG
Contact Resistance	10 milliohms maximum
Insulation Resistance	20 megaohms minimum (USCAR)

MECHANICAL

Operating Temperature	-40°C to 125°C (-40°F to 257°F)
Sealing	2-12 inches of 5% salt solution for 24 hours
Wire Sealing Range	.095” - .120” (2.42mm - 3.05mm)
Insulation Strip Length	.210” - .220” (5.33mm - 5.59mm)
Mating Life	25 cycles minimum
Salt Spray	5% solution 96 hours
Heat	125°C +/- 3° 1000 hours
Chemical Resistance	Resistant to most common automotive contaminants
Vibration	10.2 grms 20 hours minimum
Shock	100 g’s 18 shocks for 6 milliseconds
Contact Type	Crimp using automatic, semi-automatic or hand tooling, printed circuit
Number of Circuits	19 & 28
Contact Insertion	From rear, with no insertion tool needed
Contact Removal	From rear, with low cost hand tool
Contact Retention	25 lbs. (111N) minimum
Polarization	Moveable molded keys and keyways

CREATE PART NUMBER

1	2	3	4
SLEB19	S2	D	
SELECT # OF CONTACTS **SLEB19 OR SLEC28** **19 CONTACTS/28 CONTACTS**	**CONNECTOR STYLE** See below for coding	**CABLE ENTRY STYLE** See below for coding	**MOUNTING HARDWARE** Omit for Normal

STEP 1: PICK # OF CONTACTS

SLEB19
19 CONTACTS

SLEC28
28 CONTACTS

STEP 2: CONNECTOR STYLE

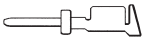
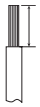
STEP 3: CABLE ENTRY STYLE

STEP 4: MOUNTING HARDWARE

CONNECTOR STYLE: P4 = Pin Crimp Receptacle S2 = Socket Crimp Plug T3 = PC Socket Straight Plug N3 = PC Socket Right Angle	CABLE ENTRY STYLE: S = Straight Endbell L = Left Endbell R = Right Endbell U = Up Endbell D = Down Endbell P = Potted PC Contacts	MOUNTING HARDWARE: * = No Modification F = Flange Mount (Plug Only) G = Screwlocks M = Metric M3.5x.60 Threaded N = 6-32 UNC Threaded E = 6-32x.56 Spacer	CONVERT TO ORDER #
19 CONTACTS			
P4	S	*	130408-0000
P4	S	G	130408-0010
P4	L	*	130408-0001
P4	R	*	130408-0002
P4	U	*	130408-0003
P4	U	G	130408-0011
P4	D	*	130408-0004
P4	U	G	130408-0012
▲ MATES WITH ▼			
S2	S	*	130409-0001
S2	S	F	130409-0000
S2	L	*	130409-0002
S2	R	*	130409-0003
S2	U	*	130409-0004
S2	D	*	130409-0005
T3	P	*	130411-0000
T3	P	M	130411-0001
T3	P	N	130411-0002
T3	P	E	130411-0015
N3	P	*	130410-0000
N3	P	M	130410-0001
N3	P	N	130410-0002
N3	P	E	130410-0015
28 CONTACTS			
P4	S	*	130412-0000
P4	S	G	130412-0010
P4	L	*	130412-0001
P4	R	*	130412-0002
P4	U	*	130412-0003
P4	U	G	130412-0011
P4	D	*	130412-0004
P4	U	G	130412-0012
▲ MATES WITH ▼			
S2	S	*	130409-0001
S2	S	F	130413-0000
S2	L	*	130413-0002
S2	R	*	130413-0003
S2	U	*	130413-0004
S2	D	*	130413-0005
T3	P	*	130415-0000
T3	P	M	130415-0001
T3	P	N	130415-0002
T3	P	E	130415-0004
N3	P	*	130414-0000
N3	P	M	130414-0001
N3	P	N	130414-0002
N3	P	E	130414-0020

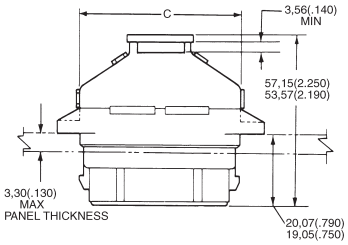
For High-Volume, Low-Temperature (100°C) Low Cost Tin Lead Contacts, Please contact us.

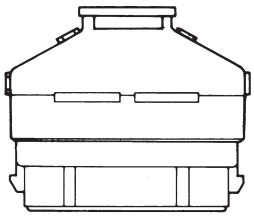
DIMENSIONS

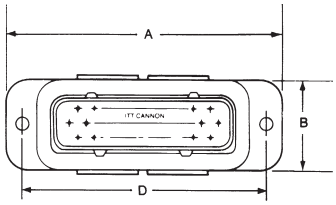
16-20 AWG	PINS FOR RECEPTACLES	SOCKETS FOR PLUGS	CRIMP TOOL	STRIP LENGTH	WIRE SEALING RANGE	WIRE HOLE FILLER	EXTRACTION TOOL
LOOSE	030-2464-007 	030-2480-000  030-2480-007 HOODED	112108-0007 	.210 - .220 IN (5.33-5.99MM) 	.095 - .130 IN (2.42-3.30MM) 	225-0093-000 	274-7068-001  323-9519-000 REPLACEMENT TIP
REEL OF 4500 PCS.	110238-0446 	110238-0488  110238-1016 HOODED	AUTOMATIC/ SEMI-AUTOMATIC PLEASE CONTACT US				

S2 PLUG

WITH FLANGE ENDBELL (PLUG ONLY)

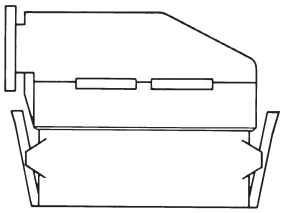


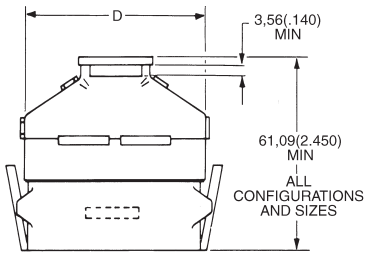


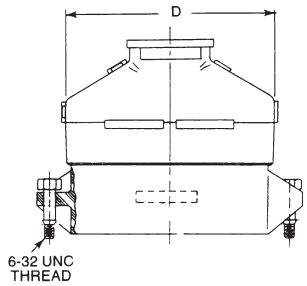


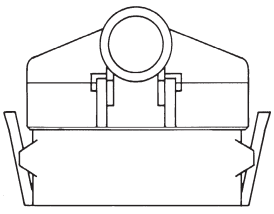
NO. OF CONTACTS	PART NUMBER BY SHELL SIZE	A MAX.	B MAX.	C MAX.	D ±0.38 (.015)
19	SLEB	71.88 (2.830)	26.16 (1.030)	47.50 (1.870)	59.05 (2.325)
28	SLEC	87.11 (3.430)	26.16 (1.030)	62.74 (2.470)	74.29 (2.925)

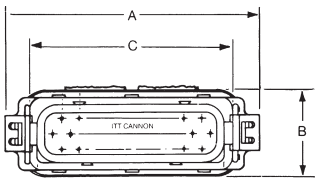
P4 RECEPTACLE

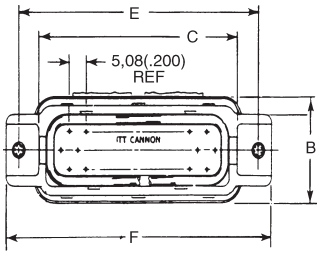










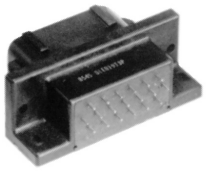


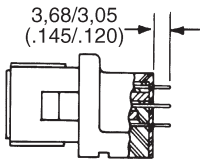
NO. OF CONTACTS	PART NUMBER BY SHELL SIZE	A MAX.	B MAX.	C MAX.	D MAX.	E ±0.38 (.015)	F MAX.
19	SLEB	59.44 (2.340)	26.16 (1.030)	44.07 (1.735)	50.58 (2.000)	55.87 (2.200)	64.25 (2.530)
28	SLEC	76.45 (3.010)	26.16 (1.030)	59.31 (2.335)	66.04 (2.600)	71.11 (2.800)	79.49 (3.130)

All dimensions in mm (inches) unless otherwise stated.

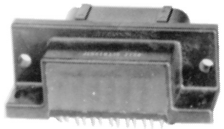
PRINTED CIRCUIT BOARD PLUG

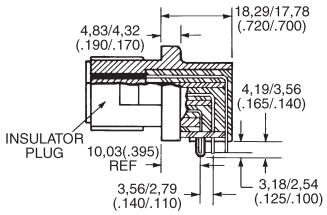
T3 STRAIGHT



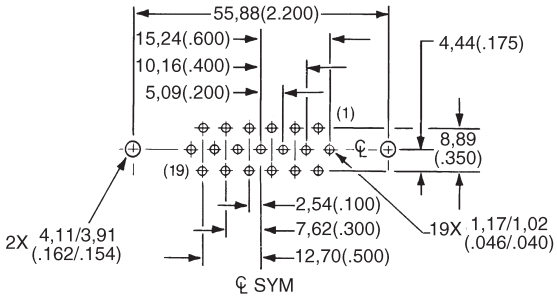


N3 RIGHT ANGLE

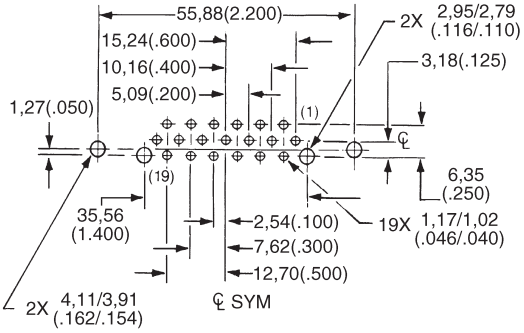




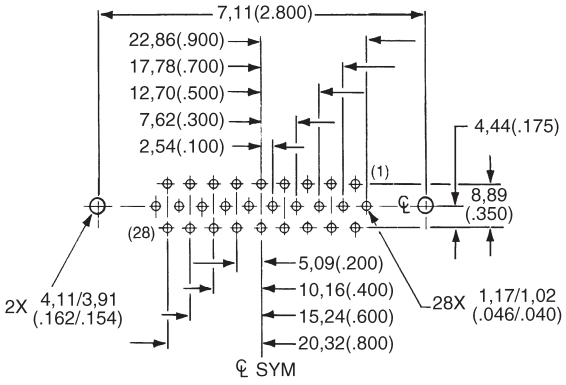
19 CONTACTS



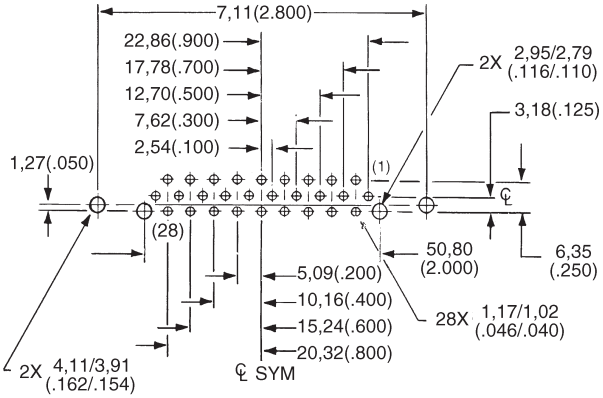
19 CONTACTS

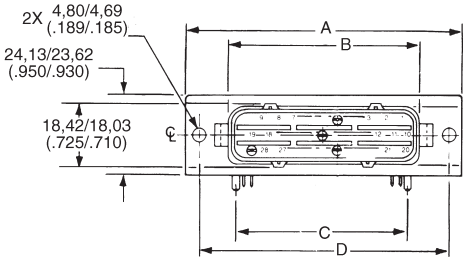


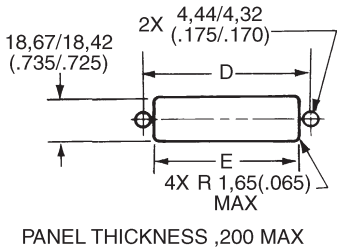
28 CONTACTS



28 CONTACTS







PANEL THICKNESS ,200 MAX

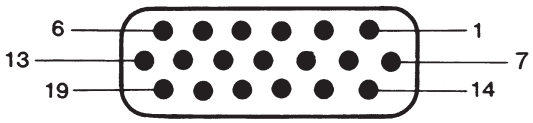
NO. OF CONTACTS	PART NUMBER BY SHELL SIZE	A MAX.	B MAX.	C MAX.	D ±.38 (.015)	E MAX.
19	SLEB	64.25 (2.530)	44.07(1.735)	35.81 (1.410)	55.87 (2.200)	47.62 (1.875)
28	SLEC	79.49 (3.130)	59.31 (2.335)	51.05 (2.010)	71.11 (2.800)	62.86 (2.475)

All dimensions in mm (inches) unless otherwise stated.

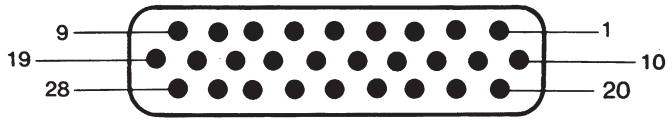
CONTACT ARRANGEMENT

FACE VIEW – ENGAGING FACE OF PLUG

SIZE B
19 CONTACTS

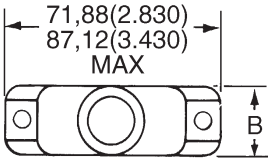


SIZE C
28 CONTACTS

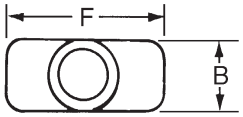


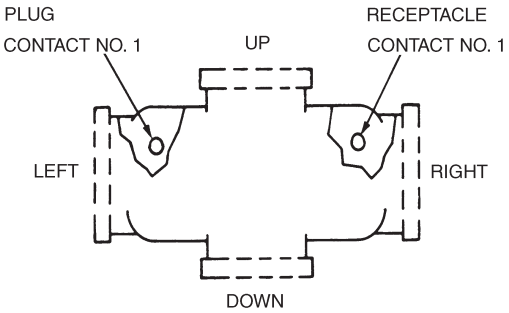
ENDBELLS

FLANGE MOUNT – (F)



STRAIGHT – (S)

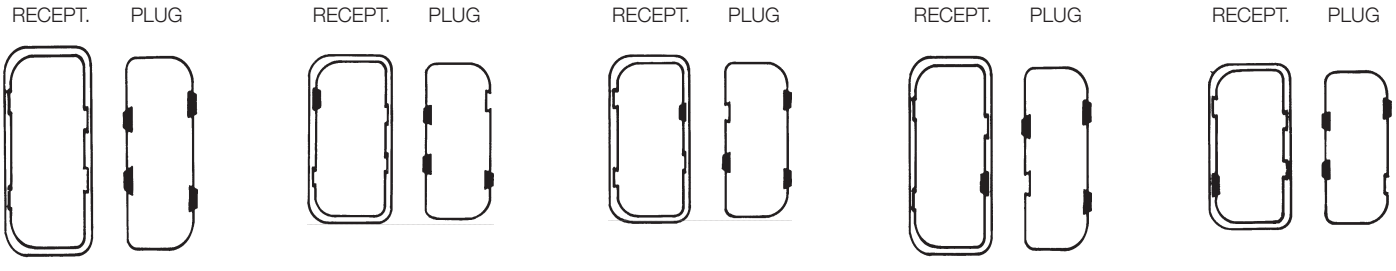




Other Endbell Views (From Rear)
"B" and "F" dimensions are the same for all SLE endbells

PART NUMBER BY SHELL SIZE	B MAX.	F MAX.	CABLE ENTRY I.D.
SLEB	26.16 (1.030)	50.80 (2.000)	14.73 (.580)
SLEC	26.16 (1.030)	66.04 (2.600)	19.81 (.780)

POLARIZATION

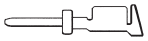


NORMAL **W** **X** **Y** **Z**

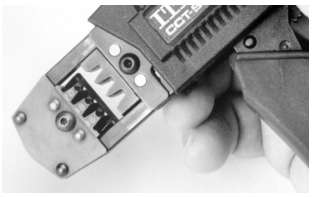
Keys can be moved / removed.

All dimensions in mm (inches) unless otherwise stated.

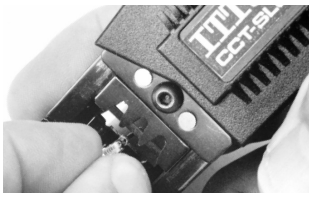
ASSEMBLY

16-20 AWG	PINS FOR RECEPTACLES	SOCKETS FOR PLUGS	CRIMP TOOL	STRIP LENGTH	WIRE SEALING RANGE	WIRE HOLE FILLER	EXTRACTION TOOL
LOOSE	030-2464-007 	030-2480-000  030-2480-007 HOODED	112108-0007 	.210 - .220 IN (5.33-5.99MM) 	.095 - .130 IN (2.42-3.30MM) 	225-0093-000 	274-7068-001  323-9519-000 REPLACEMENT TIP
REEL OF 4500 PCS.	110238-0446 	110238-0488  110238-1016 HOODED	AUTOMATIC/ SEMI-AUTOMATIC PLEASE CONTACT US				

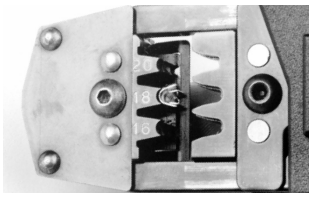
CRIMPING



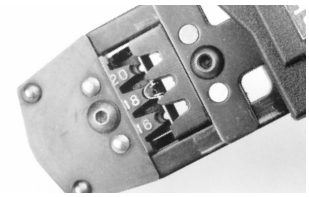
STEP 1: Cycle the CCT-SLE hand tool to the open position. Hand tool Part No. 995-0002-232



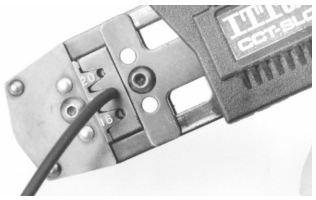
STEP 2: While pressing upward on the locator spring, insert the contact with tails upward completely into the locator.



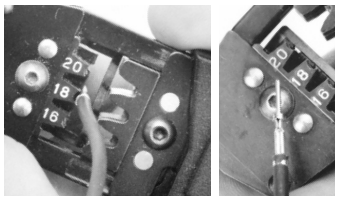
STEP 3: When correctly positioned, the contact should be located beyond flush with the edge of the CCT-SLE and be positioned on the concave, polished split level crimp.



STEP 4: Partially cycle (usually the first click) the hand tool, assuring that the upward-thrusting tails of the contact have started engaging with the top jaw of the tool. There is a slight tendency for the contact to roll out of vertical alignment.

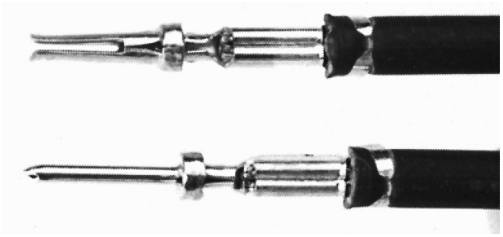


STEP 5: Insert the pre-stripped wire into the crimp area of the contact and completely cycle the tool.



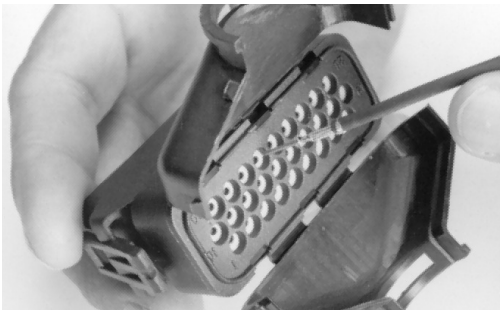
STEP 6: While pressing upward on the locator spring, withdraw the crimp termination. The result will be a perfect termination.

CRIMP INSPECTION



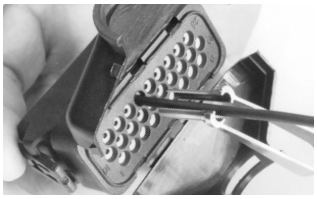
Note that there are no un-terminated wire strands and that some strand ends can be seen at the forward edge of the crimp. Also note the insulation is gripped by the smaller secondary crimp. Distortion is at a minimum, both axially and laterally – no sharp edges. Enlargement of micro section allows for final judgment of crimp quality. This test is recommended whenever new tools or new types of wire are used.

INSERTION (SLE SHOWN)



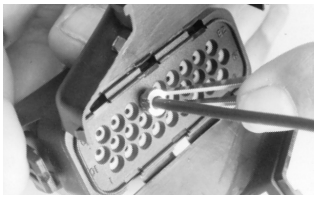
Insert contact from rear; an audible snap can be felt and heard. A slight pull in the opposite direction will confirm complete insertion.

EXTRACTION (SLE SHOWN)



STEP 1: Open the CET-SLE extraction tool and place it over the insulation of the wire.

STEP 2: Using a straight forward motion, insert the tool along the wire until it bottoms against the connector. Do not use a screwing motion, as damage will result.



STEP 3: While the CET-SLE is bottomed, simply pull the wire/ contract assembly out.

STEP 4: Remove the CET-SLE. Extraction is complete.