

ITT CANNON

**CIRCULAR CONNECTORS
SURE-SEAL®**

146-334 to 345.

For technical or budgetary information on this product please call 714/964-7400

+ 146-339

RELIABILITY. LOW COST. PERFORMANCE. DELIVERY!

ITT Cannon provides them all with SURE-SEAL® connectors—a new series of low cost, UL and CSA recognized, environmental connectors.

The one-piece molded body and rugged multiple moisture seals make the SURE-SEAL connector a natural for applications whose outside contaminants must be excluded.

One of the many features of the SURE-SEAL connector is its simplicity. In addition to the contacts, only two other parts—the connector bodies—are required to complete the interconnect.

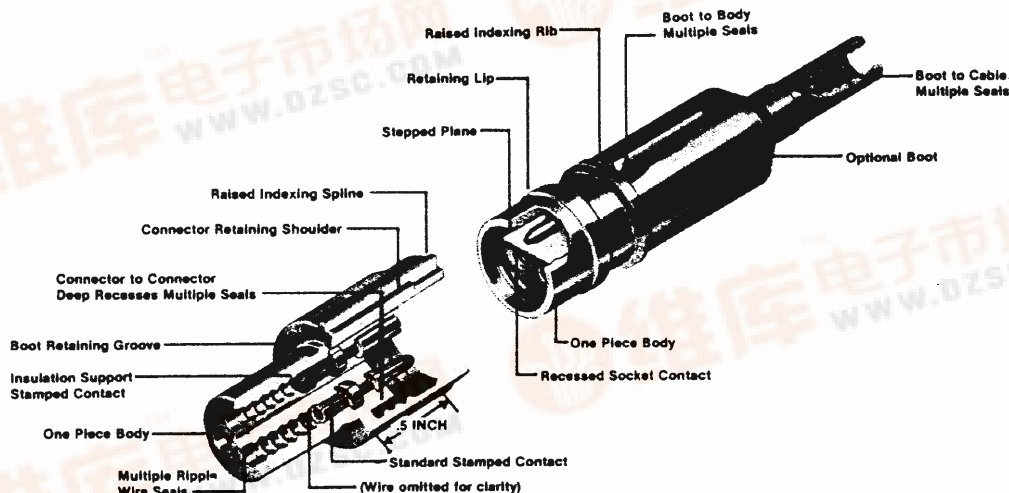
ITT Cannon developed SURE-SEAL connectors to meet the increased requirements for safety and reliability in the automotive field brought about by Department of Transportation regulations. These sealed connectors satisfy all of the parameters defined by commercial/industrial standards including vibration, shock, temperature cycling, salt water spray and immersion, petroleum derivatives, industrial gas, and most important low millivolt drop and low contact resistance.

Cannon has recently added a mini SURE-SEAL version and a wall mounting square flange configuration to its family of SURE-SEAL connectors. For more information on these two new series please fill out the reply at the back of your Standard Line Catalog.

Along with the SURE-SEAL connector Cannon has developed another commercial/industrial connect series called the VE connector. For more information on this heavy duty transportation equipment connector please turn to page 135.



FEATURES



Low Installed Cost

ITT Cannon's Sure-Seal connectors are designed to be terminated by the O.E.M. The O.E.M. being the termination facility gives complete in-house capability! The total installed cost is what counts.

Field Serviceable

When necessary, Sure-Seal connectors can be changed, modified or re-wired in the field.

One-Piece Molded Bodies

The Sure-Seal connector incorporates a very simple one-piece molded body. No other parts—other than contacts—are needed to assemble a complete connector.

Low Cost Stamped Contacts

Without sacrificing quality, the cost of Sure-Seal connectors is kept low by using stamped contacts available on reels in a continuous strip for use on the industry accepted ABT-500 or ABT-607 semi automatic crimp press. All contacts utilize a "B" type crimp.

Wide Wire Gage and Cable Accommodations

Ideally suited to be terminated on SAE-1128 wires of size 14, 16 and 18 AWG, wire sizes with insulation in the range of .100 (2.54) to .147 (3.73) inches, termination to multi-conductor jacketed cables in

the range of .208 (5.28) to .380 (9.65) inches diameter, and can be terminated to three different wire ranges with total environmental sealing still assured.

Polarized Against Mis-Mates

Sure-Seal Connector mating faces are constructed with two stepped planes; the plug and receptacle must be properly oriented in order for the contacts to engage. For "blind" mating a raised indexing rib and matching raised indexing spline has been added to the plug and receptacle.

Water Submersible

Not just splash proof, but truly submersible for short periods of time. The Sure-Seal connector has been successfully tested in up to three feet of 5% water saline solution. **Note: Although Sure-Seal can withstand submersion, it is not designed to be used as an underwater connector.**

Resistant to Vehicular/Industrial Environments

Sure-Seal connectors are designed to meet temperatures from -40°C to 105°C under conditions of high humidity severe vibration, ice and mud. Sealing integrity is still maintained with exposure to brake fluid, gasoline, diesel fuel, anti-freeze, ultra violet, ozone, steam cleaning under normal operating conditions.

NOTE: HIGH TEMPERATURE VERSIONS OF MOLDED BODIES TO MEET TEMPERATURES UP TO 150°C WITH STAMPED CONTACTS HAVING SELECTIVE SILVER OR GOLD PLATE WILL BE AVAILABLE SOON. PLEASE CONTACT THE FACTORY OR YOUR LOCAL CANNON SALES OFFICE OR DISTRIBUTORS FOR ORDERING NOMENCLATURE.



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Dimensions subject to change.
(millimeters are in parenthesis)

GENERAL INFORMATION—HOW TO ORDER

To order connector, specify component parts and contact part number as listed.

Insert Arrange- ment	Receptacle Housing	Plug Housing	Boot	Clip/ Clamp	Color	Grommet
SS1*	120-1833-000	120-1832-000	N/A	026-0452-000	Black	N/A
SS2*	120-1804-000	120-1807-000	317-398-000	029-0263-000	Red	351-1640-000
SS3*	120-1805-000	120-1808-000	317-1397-000	029-0262-000	Yellow	351-1641-000
SS4*	120-1806-000	120-1809-000	317-1399-000			
SS5*	120-1839-000	120-1841-000	N/A	026-0450-000	Natural	351-1633-000
SS6*	120-1840-000	120-1842-000	N/A			
SS7*	120-1874-000	120-1873-000	N/A			
SS8*	120-1866-000	120-1865-000	N/A	026-0451-000	Black	351-1634-000
SS9*	120-1868-000	120-1867-000	N/A			
SS10*	120-1870-000	120-1869-000	N/A			

* Add R for Receptacle, P for Plug, C for Clamp, B for Boot, H for Grommet.

	Contact Part Numbers		
		Pin	Socket
Non-Insulation Support	Individual*	030-2196-000	031-1267-000
	Reels of 5000	110238-0040	110238-0085
Insulation Support	Individual*	030-2196-001	031-1267-001
	Reels of 5000	110238-0195	110238-0194

* Loose piece available from distribution only.

POWER CONNECTORS (See page 132)

Insert Arrange- ment	Receptacle Housing	Plug Housing
SS1R-4*	120-1903-000	—
SS1P-4*	—	120-1905-000
SS1R-8*	120-1904-000	—
SS1P-8*	120-1906-000	—

STANDARD DATA

MATERIALS AND FINISHES

Plug	Elastomeric material
Receptacle	Elastomeric material
Contacts	Copper alloy, tin-lead plate
Socket Contact Sleeves	Stainless steel, passivated

MECHANICAL DATA

Crimp Contacts	Semi-automatic or hand crimpable
Contact Positions	1 thru 10 inclusive
Polarization	Stepped plane positive polarization and visual polarization
Contact Retention	7.5 lbs. minimum
Contact Insertion	From rear with simple hand tool, or simultaneous insertion of multiple crimped contacts with semi-automatic insertion machine

ELECTRICAL DATA

Contact Resistance	10 Milliohms maximum
Current Rating*	15 amps continuous at 85°C 8 amps continuous at 105°C
Insulation Resistance	100 Megohms minimum
Dielectric Withstanding Voltage	1,200 VAC at sea level
Wire Range	14 AWG to 18 AWG
Wire Insulation Sealing Range	.100" (.254) minimum; .147" (3.73) maximum

ACCESSORIES

Protective Seal Boot	Seals cabled wire jackets to connector housing.
Connector Clamp	Clamps plug and receptacle in mated condition.
Connector Grommet	Provides for panel mounting of either plug or receptacle

* For total current carrying capacity of connectors with multiple wires in bundles, refer to derating curves in CS-155.

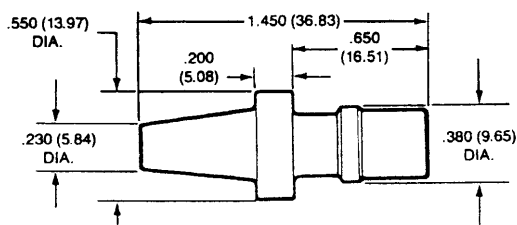
TEST CRITERIA

Sealing Capability	3 foot depth immersion in 5% salt solution, room ambient	Salt Spray	In accordance with MIL-STD-202D, Method 101D
Weather, Ozone and Ultra Violet Resistance	In accordance with ASTM D-1149 (100 pphm) and ASTM D-1171 (outdoor exposure)	Humidity	95% at 95 °C/1000 hours
Industrial Gas	Equivalent to MIL-C-23216, para. 4.6.13.	Dry Heat	105 °C for 1000 hours
Durability	50 cycles mating and unmating	Vibration	10 to 55 Hz, .06" DA, 1 hour, Y (radial) and Z (longitudinal) axes
		Shock	50g, 11ms, 30 cycles, Y (radial) and Z longitudinal) axes

SS1

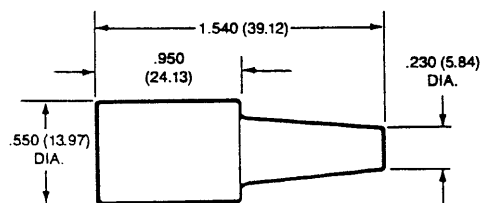
PLUG

PART NUMBER 120-1832-000



RECEPTACLE

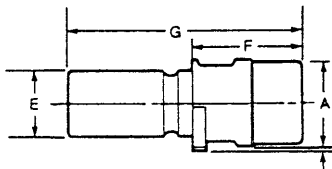
PART NUMBER 120-1833-000



For technical or budgetary information on this product please call 714/964-7400

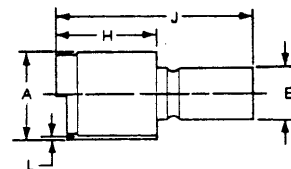
SS2—SS4

PLUG



Body Identifier	Part Number	E Dia. Max.	F Max.	G Max.	L Max.	A Dia. Max.
SS2P	120-1807-000	.430 (10.92)	.690 (17.53)	1.410 (35.81)	.050 (1.27)	.550 (13.97)
SS3P	120-1808-000	.500 (12.70)	.690 (17.53)	1.410 (35.81)	.050 (1.27)	.600 (15.24)
SS4P	120-1809-000	.500 (12.70)	.690 (17.53)	1.410 (35.81)	.050 (1.27)	.600 (15.24)

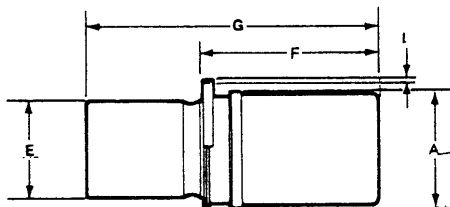
RECEPTACLE



Body Identifier	Part Number	A Dia. Max.	E Max.	H Max.	J Max.	L Max.
SS2R	120-1804-000	.710 (18.03)	.430 (10.92)	.835 (21.21)	1.550 (39.37)	.050 (1.27)
SS3R	120-1805-000	.760 (19.30)	.500 (12.70)	.835 (21.21)	1.550 (39.37)	.050 (1.27)
SS4R	120-1806-000	.760 (19.30)	.500 (12.70)	.835 (21.21)	1.550 (39.37)	.050 (1.27)

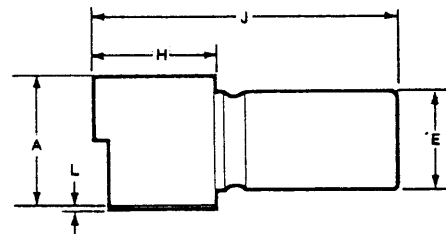
SS5—SS10

PLUG



Body Identifier	Part Number	E Dia. Max.	F Max.	G Max.	L Max.	A Dia. Max.
SS5P	120-1841-000	.810 (20.57)	.700 (17.78)	1.470 (37.34)	.050 (1.27)	1.110 (28.19)
SS6P	120-1842-000	.810 (20.57)	.700 (17.78)	1.470 (37.34)	.050 (1.27)	1.110 (28.19)
SS7P	120-1873-000	.810 (20.57)	.700 (17.78)	1.470 (37.34)	.050 (1.27)	1.110 (28.19)
SS8P	120-1865-000	.935 (23.75)	.700 (17.78)	1.470 (37.34)	.050 (1.27)	1.135 (28.83)
SS9P	120-1867-000	.935 (23.75)	.700 (17.78)	1.470 (37.34)	.050 (1.27)	1.135 (28.83)
SS10P	120-1869-000	.935 (23.75)	.700 (17.78)	1.470 (37.34)	.050 (1.27)	1.135 (28.83)

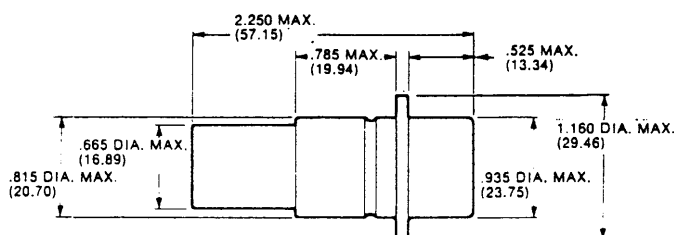
RECEPTACLE



Body Identifier	Part Number	A Dia. Max.	E Max.	H Max.	J Max.	L Max.
SS5R	120-1839-000	1.160 (29.46)	.810 (20.57)	.835 (21.21)	1.610 (40.89)	.050 (1.27)
SS6R	120-1840-000	1.160 (29.46)	.810 (20.57)	.835 (21.21)	1.610 (40.89)	.050 (1.27)
SS7R	120-1874-000	1.160 (29.46)	.810 (20.57)	.835 (21.21)	1.610 (40.89)	.050 (1.27)
SS8R	120-1866-000	1.285 (32.64)	.935 (23.75)	.835 (21.21)	1.610 (40.89)	.050 (1.27)
SS9R	120-1868-000	1.285 (32.64)	.935 (23.75)	.835 (21.21)	1.610 (40.89)	.050 (1.27)
SS10R	120-1870-000	1.285 (32.64)	.935 (23.75)	.835 (21.21)	1.610 (40.89)	.050 (1.27)

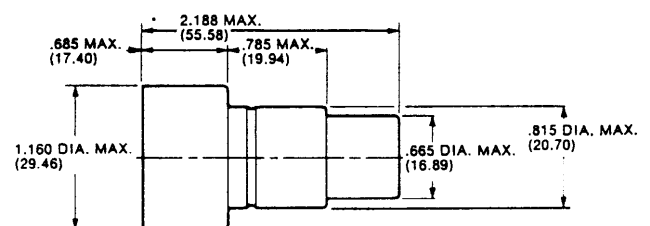
SS1 POWER CONNECTOR Accommodates VE AWG #4 through #10 (see page 135 for general VE Series description)

PLUG



Body Identifier	Part Number	AWG Size
SS1P-4	120-1905-000	#4 or #6
SS1P-8	120-1906-000	#8 or #10

RECEPTACLE

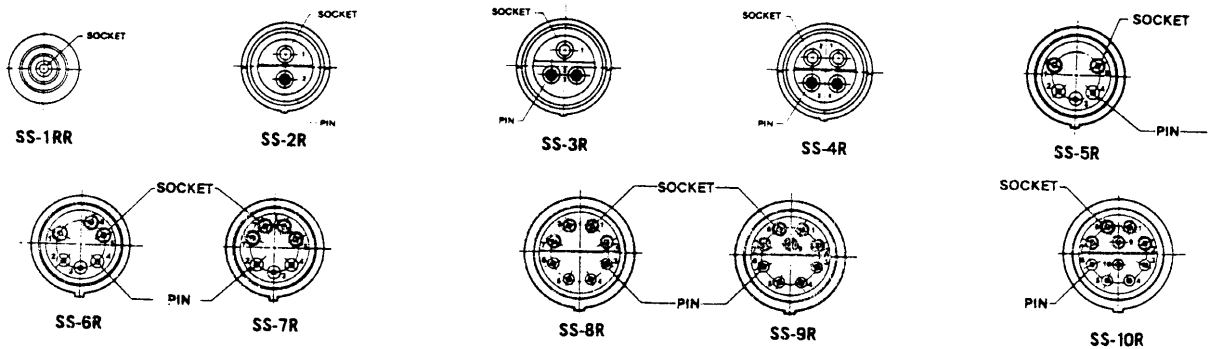


Body Identifier	Part Number	AWG Size
SS1R-4	120-1903-000	#4 or #6
SS1R-8	120-1904-000	#8 or #10

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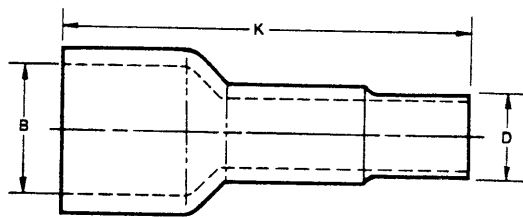
CONTACT ARRANGEMENTS

Drawing not to scale. Rear view, receptacle side.

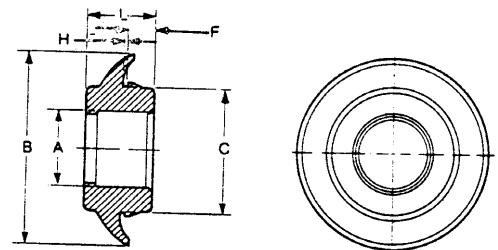


ACCESSORIES

BOOT



GROMMET



Used With Body Identifier	Part Number	B Dia.	Cable O.D.	K Ref.	D Dia.
SS-2	317-1398-000	.435 (11.05)	.208-.228 (5.28-5.79)	2.05 (52.07)	.380 (9.65)
SS-3 or SS-4	317-1397-000	.504 (12.80)	.220-.240 (5.59-6.10)	2.05 (52.07)	.380 (9.65)
SS-3 or SS-4	317-1399-000	.504 (12.80)	.345-.380 (8.76-9.65)	2.05 (52.07)	.500 (12.70)

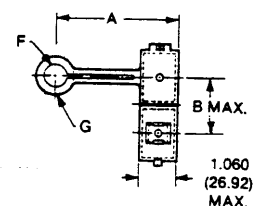
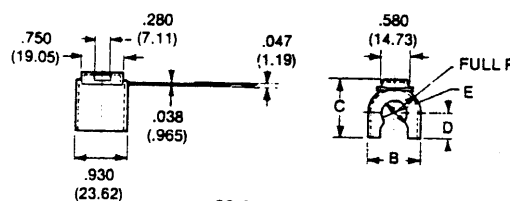
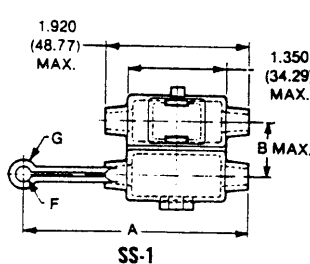
Used With Body Identifier	Part Number	A Dia. Max.	B Dia. Max.	C Dia. Max.	F Max.	H Ref.	L Max.
SS-2	351-1640-000	.410 (10.41)	1.275 (32.39)	.755 (19.18)	.230 (5.84)	.055 (1.40)	.690 (17.53)
SS-3, or 4	351-1641-000	.470 (11.94)	1.275 (32.39)	.755 (19.18)	.230 (5.84)	.055 (1.40)	.690 (17.53)
SS-5, 6 or 7	351-1533-000	.765 (19.43)	2.200 (55.88)	1.445 (36.70)	.315 (8.00)	.065 (1.65)	.810 (20.57)
SS-8, 9, or 10	351-1634-000	.890 (22.61)	2.200 (55.88)	1.445 (36.70)	.315 (8.00)	.065 (1.65)	.810 (20.57)

SEALING PLUG—PART NUMBER 225-0093-000.

Will maintain integrity of environmental seal if all cavities are not used.

Note: SS-2, 3 or 4 recommended panel hole diameter to be 25/32 X .060 material.
SS-5 thru -10 recommended panel hole diameter to be 1 1/2 X .060 material.
These diameters are for reference only.

CLIP/CLAMP



Used With Body Identifier	Part Number	Colors	A Max.	B	C	D	E Dia.	F Max.	G Max.
SS-1C	026-0452-000	Black	2.225 (56.52)	.740 (18.80)	—	—	—	.210 (5.33)	.390 (9.91)
SS-2C	029-0263-000	Red	—	.890 (22.61)	1.000 (25.40)	.420 (10.67)	.420 (10.67)	—	—
SS-3C, 4C	029-0262-000	Yellow	—	.930 (23.62)	1.050 (26.67)	.450 (11.43)	.480 (12.19)	—	—
SS-5C, 6C, 7C	026-0450-000	Natural	3.045 (77.34)	1.395 (35.43)	—	—	—	.610 (15.49)	.910 (23.11)
SS-8C, 9C, 10C	026-0451-000	Black	3.045 (77.34)	1.520 (38.61)	—	—	—	.660 (16.76)	.960 (24.38)