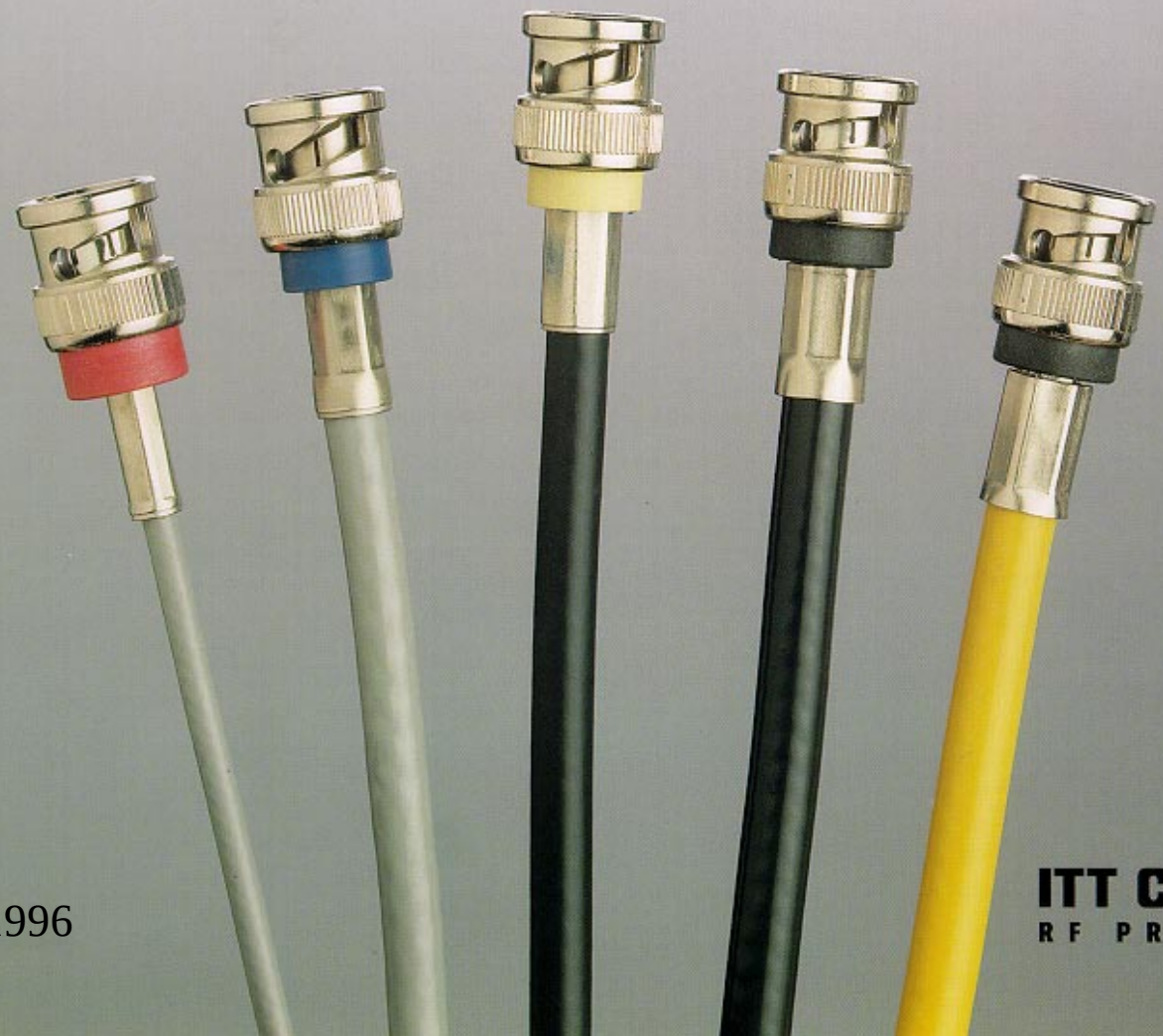
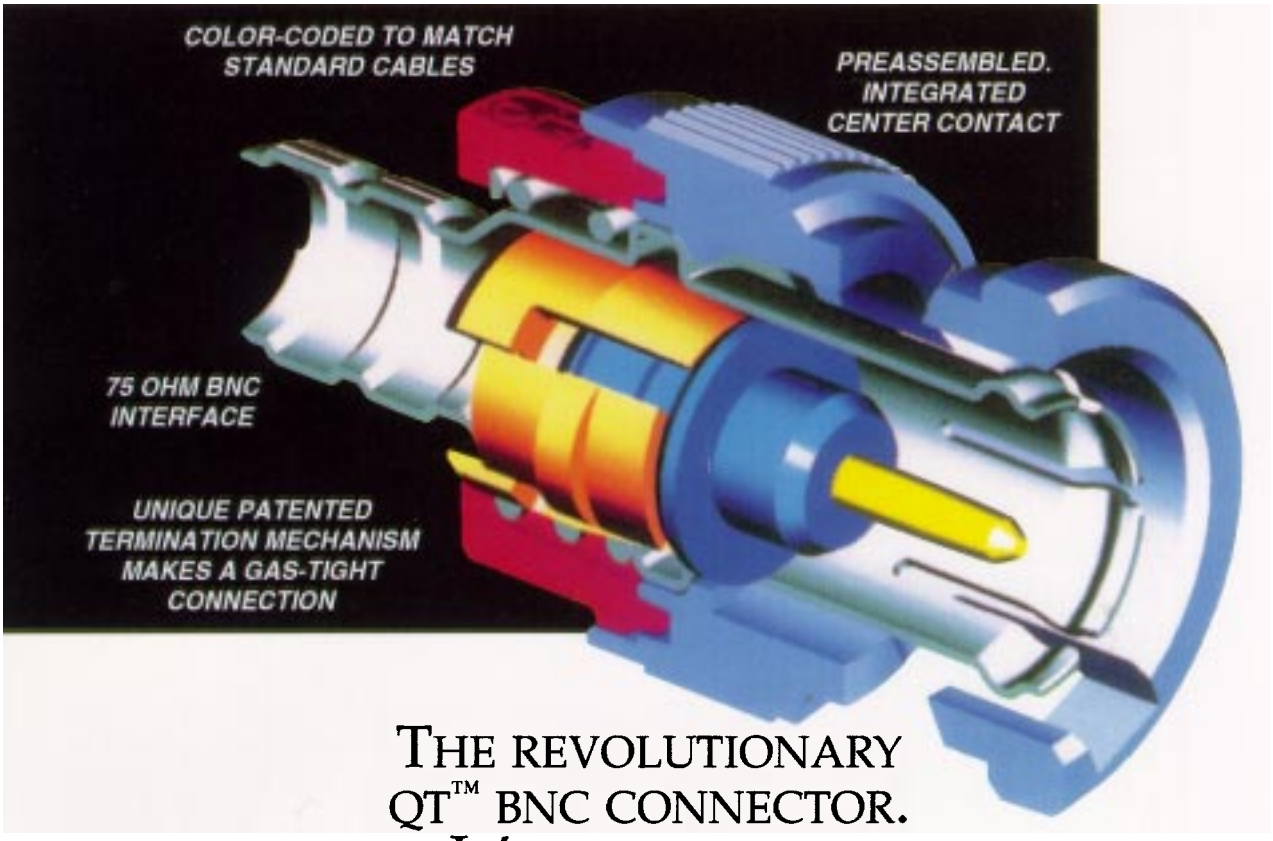
QT™ BNC 75 OHM COAXIAL CONNECTORS



1996

ITT Cannon
RF PRODUCTS

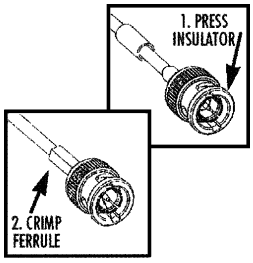
0-2 GHz IN TEN SECONDS, *FLAT*.



THE REVOLUTIONARY QT™ BNC CONNECTOR. IT'S ABOUT TIME.

BECAUSE TIME IS MONEY.

Thanks to a unique integrated center contact design, the problems associated with handling the separate center contacts are eliminated. The patented QT (Quick Termination) BNC provides you with a 50-75% time savings, through the simple two-step termination method.



But that's not the half of it. These industry-standard 75Ω BNC connectors meet the rigorous specifications of the telecommunications and broadcast industries and are color-coded to easily identify all the popularly sized solid center conductor coax cables.

It's a perfect fit for telephony, broadcast, data communications and other applications. And standard industry rear ferrule crimp tools can be utilized or our optional single-action QT termination tool (pushes insulator, crimps ferrule) is available, to make connections in no time flat.

Don't wait another second to find out more.
Call us at 800-532-3750 or at 860-223-2700.
Or fax us at 860-225-2781.
After all, time is...well, you know.

Introduction

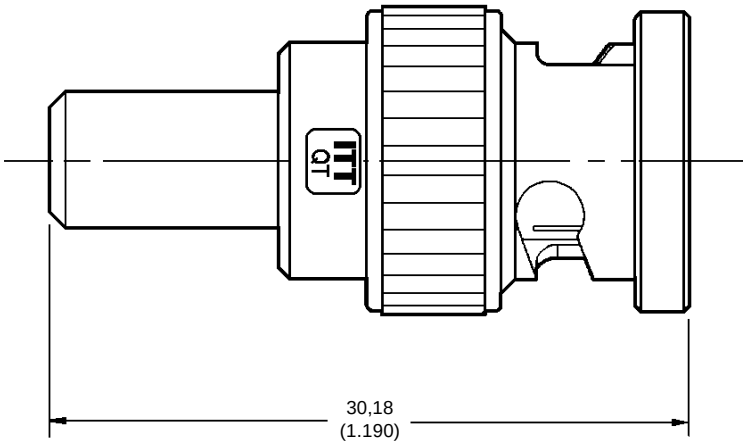
This totally new termination technique provides a high pressure, gas tight center conductor joint of exceptional mechanical integrity, without crimping or having to solder the center contact. This connector can be terminated onto cable in less than 20 seconds, significantly reducing installation costs.

The 75 Ω BNC connector is designed to meet or exceed the requirements of digital telecommunications and digital video broadcast applications up to 2 GHz.

To obtain additional technical information, pricing and delivery, please call ITT Cannon RF Products at 1-800 532-3750 or 860-223-2700

Features

- Gas tight center conductor joint
- Color coded rear cap for easy identification of cable types
- Fast assembly application
  - two piece design with one crimping operation terminating inner and outer conductors
- Knurled rear post for improved cable retention
- Low VSWR/Insertion loss
- Gold plated center contacts exceeding the corrosion requirements of MIL-C-39012 specification
- Optional colored strain relief boot

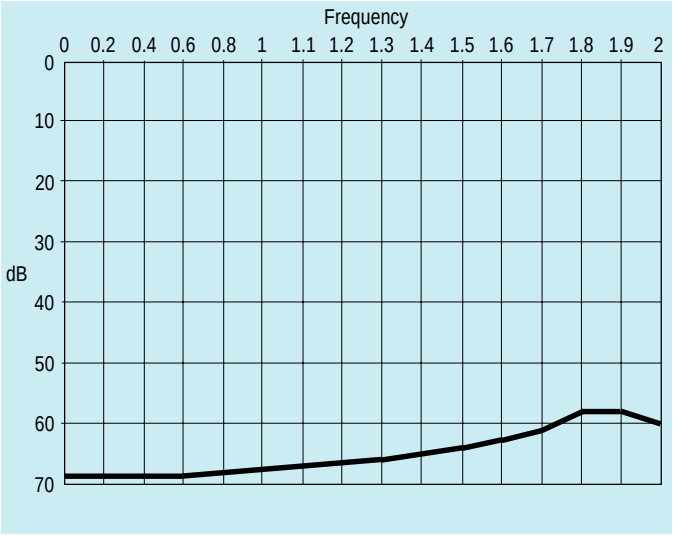


Specification

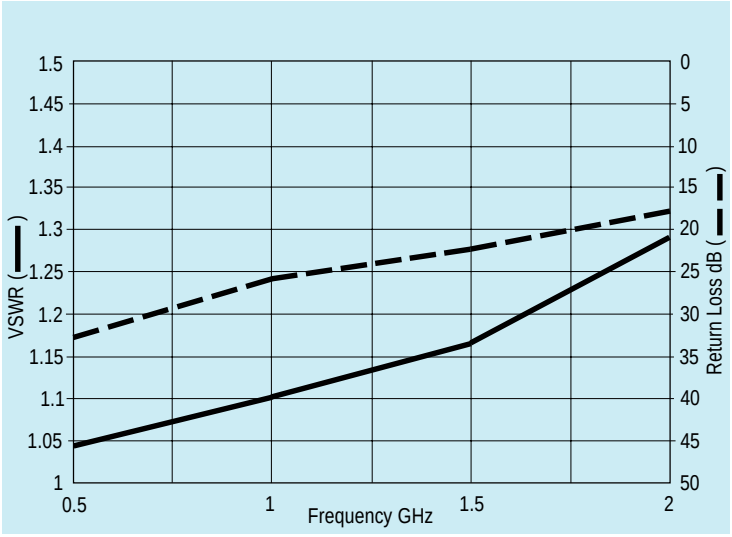
ELECTRICAL	Impedance	75 Ω nominal
	Frequency Range	DC to 2.0 GHz
	Voltage Rating	At sea level = 500 V rms.
	Insulation Resistance	5000 MΩ minimum
	Contact Resistance	Outer contact = 2.0 mΩ initial. 4.0 mΩ post environmental Braid to body = 1.0 mΩ maximum
	Termination Resistance (QT centre contact)	3 mΩ maximum (excluding pole resistance)
	Voltage Standing Wave Ratio (VSWR)	DC - 1 GHz: 1.2 maximum. 1 - 2 GHz: 1.3 maximum
	Contact Current Rating	1.5 A dc maximum
	Insertion Loss	0.2 dB maximum @ 2 GHz
	RF Leakage	-60 dB typical up to 2 GHz
	Dielectric Withstanding Voltage (DWV)	1500 Vrms @ sea level
	Corona Level	375 Vrms minimum @ 21 km (70k feet)
MECHANICAL	Insertion Force	22.3 N (5 lbs) maximum
	Coupling Mechanism Retention	445 N (100 lbs.) minimum
	Contact/Insulator Retention	22.3 N (5 lbs.) minimum axial force
	Materials	Body: Phosphor bronze. Contact: Beryllium copper. Insulators: Polymers rated to UL94VO
	Finish/Plating	Ferrule: Annealed copper alloy. Center contact: Gold plated. Other metal parts nickel plated.
ENVIRONMENTAL	Temperature Rating	-40°C to 85°C
	Vibration	(a) Frequency range from 10 Hz to 500 Hz. (b) Displacement: 0.75 (.029) (c) Acceleration: 98 m/S^2 (d) Duration: 6 hours
	Shock	490 m/S^2 for 11 mS
	Bump	4000 total at 390 m/S^2
GENERAL	Connector Durability	200 matings minimum
	Cable Retention	

Cable	Axial Force	Torque
M17/29-RG59/U	133 N (30 lbs.) minimum	0.9 Nm (8.0 in. lbs.)
ATT 734	133 N (30 lbs.) minimum	0.9 Nm (8.0 in. lbs.)
ATT 735A	45 N (10 lbs.) minimum	0.45 Nm (4.0 in lbs.)
Belden 1694A	133 N (30 lbs.) minimum	0.9 Nm (8.0 in. lbs.)

Typical RF Leakage



Typical Frequency Response



To obtain a copy of the Qualification Test Report please call ITT Cannon RF Products at 1-800 532-3750 or 860-223-2700 (US), +44 (0) 1256 311516 (UK)

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Dimensions are shown in mm (inch)
Dimensions subject to change

Connector/Tooling Ordering Guide

Straight Cable Plug Part Number (Single Pack)*	Cable Type	Crimp Hex. (Die Size)	Center Conductor Diameter	Combined Assembly/ Crimp Tool Part Number	Die Only Part Number	Calibration/Gaging Kit Part Number
W58-124-9059910	ATT 735A	4,22 (.166)	0,40 ± 0,005 (.015 ± .0002)	050-000-0030030	050-000-0030032	050-000-0030033
W58-124-9019910†	ATT 735A	4,52 (.178)	0,40 ± 0,005 (.015 ± .0002)	050-000-0030020	050-000-0030022	050-000-0030023
W58-124-9029910	ATT 734	6,48 (.255)	0,79 ± 0,008 (.031 ± .0003)	050-000-0030040	050-000-0030042	050-000-0030043
W58-124-9069910†	ATT 734	6,48 (.255)	0,79 ± 0,008 (.031 ± .0003)	050-000-0030050	050-000-0030042	050-000-0030043
W58-124-9039910	M17/29-RG59/U	6,48 (.255)	0,57 ± 0,028 (.022 ± .001)	050-000-0030040	050-000-0030042	050-000-0030043
W58-124-9049910	Belden 1694A	7,62 (.300)	1,02 ± 0,010 (.040 ± .0004)	050-000-0030010	050-000-0030012	050-000-0030013

† In accordance with KS23558
* To obtain connectors supplied in bulk pack (quantity 100) change last digit of part number to 6.

Connector Manufacturers Cross Reference

ITT Cannon	Kings	AMP	Amphenol	Trompeter	Canare	ADC	Gilbert	Berg
W58-124-9059910	2025-44-9	1-413589-0	31-70072	UPL220-735A	None	BNC-735	NS-5722-5	28P374-6
W58-124-9029910	2025-76-9	413589-7	7008-1000	UPL220-734	None	BNC-734	GBNC-62P145	28P374-5
W58-124-9039910	2025-36-9	221185-2	31-70008	UPL220-RG59	BCP-C4B	BNC-59	GBNC-62P145	28P374-1
W58-124-9049910	2025-79-9	221185-1	31-71064*	UPL220-020	BCP-C5B	BNC-1694	GA-BNC-6-8AHS-342L	None

* Amphenol also uses 31-71000-RFX-1 and 31-70000

Strain Relief Boots

If the connector application is such that the connector will experience extreme side loads (i.e. 90^0 bends of cable), ITT Cannon recommends the use of the optional strain relief boot.

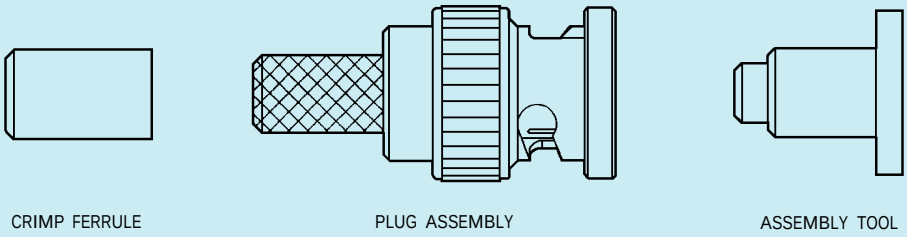
The boot will transfer side loads exerted by the cable to the coupling nut, avoiding high stresses and interface movement. The boot also creates a more rugged connector for floor wiring applications and minimises dust ingress.

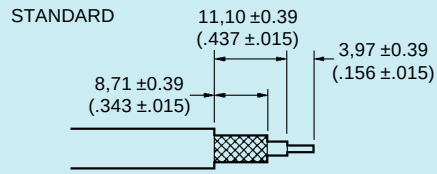
The boot also comes in various colors to aid in application identification.

Boot Part Number	Color
33532-47-00	Black
33532-47-01	Brown
33532-47-02	Red
33532-47-03	Orange
33532-47-04	Yellow
33532-47-05	Green
33532-47-06	Blue
33532-47-07	Violet
33532-47-08	Gray
33532-47-09	White

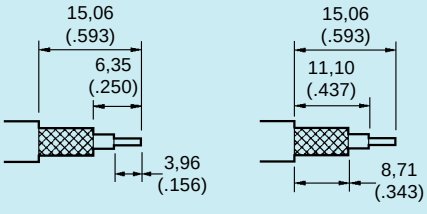
NOTE
These boots are suitable for use with Cable Types ATT 734, Belden 1694A and M17/29-RG59/U only.

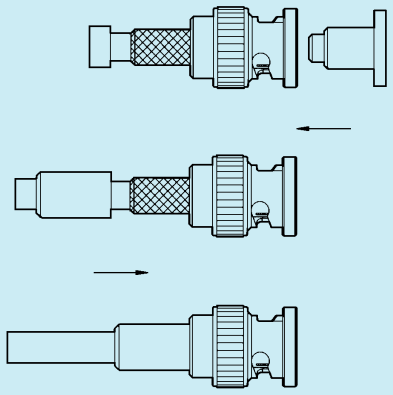
BBAI-1243 QT™ 75Ω BNC Plug for Braided Cable





ALTERNATIVE STRIPPING DIMENSIONS FOR AUTOMATIC STRIPPING MACHINES





1. Prepare cable using a suitable stripping tool to the dimensions shown, being careful not to damage the braid, dielectric, foil or inner conductor.

   NOTE: Do not attempt to mate unterminated connectors.

2. ENSURE THAT THE INNER CONDUCTOR IS STRAIGHT.
   After removal of the assembly tool from the crimp barrel (if fitted), slide crimp ferrule over the cable sheath. Fit the plug assembly onto the cable so that the crimp barrel slides between the dielectric/foil and the braid (gently twisting and rocking the plug assembly to spread the braid will help). Care must be taken to ensure that no strands of braid are trapped under the body. The cable must be inserted until the dielectric can be felt butting against the rear insulator.

3. Supporting the cable and plug asembly in one hand, press the front insulator fully home using the plastic assembly tool provided. A light pull on the cable will confirm the captivation of the center conductor. (This step can be eliminated if the ITT Cannon QT Crimp Tool is being used).

4. Slide the ferrule over braid until it butts up to the back of the connector. Crimp in position using an ITT Cannon Crimp Tool and suitable die set (See table).

   Alternative method, using combined assembly/crimp tool
   Load the connector assembly into the combined assembly/crimp tool (see table) making sure that the center pin is aligned with the hole in the dielectric bushing and the ferrule aligned in the die. Close tool handles until ratchet releases. Allow tool handles to return to the open position and remove crimped connector assembly.

Combined Assembly/Crimp Tool

Cable Type	Cap Color	Die Size	Die Part Number	Combined Assembly/ Crimp Tool Part Number
ATT 735A	Red	4,22 (.166)	050-000-0030032	050-000-0030030
ATT 735A †	Red	4,52 (.178)	050-000-0030022	050-000-0030020
ATT 734	Blue	6,48 (.255)	050-000-0030042	050-000-0030040
ATT 734 †	Blue	6,48 (.255)	050-000-0030042	050-000-0030050
M17/29-RG59/U	Yellow	6,48 (.255)	050-000-0030042	050-000-0030040
Belden 1694A	Black	7,62 (.300)	050-000-0030012	050-000-0030010

† In accordance with KS23558

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Dimensions are shown in mm (inch)
Dimensions subject to change

THIS NOTE MUST BE READ IN CONJUNCTION WITH THE PRODUCT DATA SHEET/CATALOG.
FAILURE TO OBSERVE THE ADVICE IN THIS INFORMATION SHEET AND THE OPERATING CONDITIONS SPECIFIED IN THE PRODUCT DATA SHEET/CATALOG COULD RESULT IN HAZARDOUS SITUATIONS.

1 MATERIAL CONTENT AND PHYSICAL FORM

Electrical connectors do not usually contain hazardous materials. They contain conducting and non-conducting materials and can be divided into two groups.

a) Printed circuit types and low cost audio types which employ all plastic insulators and casings.

b) Rugged, Fire Barrier and High Reliability types with metal casings and either natural rubber, synthetic rubber, plastic or glass insulating materials. Contact materials vary with type of connector and also application and are usually manufactured from either: Copper, copper alloys, nickel, alumel, chromel or steel. In special applications, other alloys may be specified.

2 FIRE CHARACTERISTICS AND ELECTRIC SHOCK HAZARD

There is no fire hazard when the connector is correctly wired and used within the specified parameters. Incorrect wiring or assembly of the connector or careless use of metal tools or conductive fluids, or transit damage to any of the component parts may cause electric shock or burns. Live circuits must not be broken by separating mated connectors as this may cause arcing, ionisation and burning.

Heat dissipation is greater at maximum resistance in a circuit. Hot spots may occur when resistance is raised locally by damage, e.g. cracked or deformed contacts, broken strands of wire. Local overheating may also result from the use of the incorrect application tools or from poor quality soldering or slack screw terminals. Overheating may occur if the ratings in the product Data Sheet/Catalog are exceeded and can cause breakdown of insulation and hence electric shock.

If heating is allowed to continue it intensifies by further increasing the local resistance through loss of temper of spring contacts, formation of oxide film on contacts and wires and leakage currents through carbonisation of insulation and tracking paths. Fire can then result in the presence of combustible materials and this may release noxious fumes. Overheating may not be visually apparent. Burns may result from touching overheated components.

3 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.

4 DISPOSAL

Incineration of certain materials may release noxious or even toxic fumes.

5 APPLICATION

Connectors with exposed contacts should not be selected for use on the current supply side of an electrical circuit, because an electric shock could result from touching exposed contacts on an unmated connector.

Voltages in excess of 30 V ac. or 42.5 V dc are potentially hazardous and care should be taken to ensure that such voltages cannot be transmitted in any way to exposed metal parts of the connector body. The connector and wiring should be checked, before making live, to have no damage to metal parts or insulators, no solder blobs, loose strands, conducting lubricants, swarf, or any other undesired conducting particles. Circuit resistance and continuity check should be made to make certain that there are no high resistance joints or spurious conducting paths. Always use the correct application tools as specified in the Data Sheet/Catalog.

Do not permit untrained personnel to wire, assemble or tamper with connectors. For operation voltage please see appropriate national regulations.

IMPORTANT GENERAL INFORMATION

(i) Air and creepage paths/Operating voltage

The admissible operating voltages depend on the individual applications and the valid national and other applicable safety regulations.

For this reason the air and creepage path data are only reference values. Observe reduction of air and creepage paths due to PC board and/or harnessing.

(ii) Temperature

All information given are temperature limits. The operation temperature depends on the individual application.

(iii) Other important information

ITT Cannon continuously endeavours to improve their products. Therefore, ITT Cannon products may deviate from the description, technical data and shape as shown in this catalog and data sheets.

(iv) Harnessing and Assembly Instructions

If applicable, our special harnessing and/or assembly instruction has to be adhered to. This is provided on request.

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