1. DIN SPECIFICATIONS

1.1. Evertz DIN1.0/2.3 Connector Details

As I/O density increases and size decreases today's broadcast manufactures are constantly looking for ways to find a happy medium between these two diametrically opposed concepts. One simple way is to move away from standard 75Ω BNC connectors and to begin using some smaller form factor 75 Ω connector. Recent developments from connector manufactures has resulted in the availability of a new type of connector quickly becoming popular to meet exactly this need. The connector is referred to as a DIN type connector. Sometimes mistakenly referred to as MiniDIN, Mini BNC or SMA connectors DIN type 75 Ω connectors are becoming very popular both due to their high performance capability, easily supporting 3G applications, their obvious high density, and the fact that the connector offers a positive locking style connector instead of BNC's compression style fit. Evertz's next generation of smaller high density applications must not only work well in terms of performance and signal quality. They must also support 3Gb/s signals, work well in difficult physical environments such as Trucks and OB vans. That is why for applications requiring a connector with a higher density than that of BNC while offering 3Gb/s performance and a positive lock onto their mating jack Evertz has chosen to use the DIN connector.

The particular connector chosen is the DIN1.0/2.3 connector. This connector, originally established as a 50 Ω connector for the telecommunications industry, has been redesigned as a 75 Ω connector for the broadcast industry. The connectors are typically rated to 3.7-4Gb/s data rates (a 4Gb/s capable connector might be referred to as a 2GHz connector) and support typical mini hi-res cable or standard HD/3G cable depending on the connector.

For small diameter cable, Belden 1855A is the cable Evertz uses as a reference, but of course any cable with appropriately matching specifications to that of Belden 1855A cable will work. When choosing a different cable take care to compare the AWG/diameter of the center conductor, the OD (outside diameter) of the outer shield, and the OD of the jacket (total cable OD), as the measurements that should be carefully matched to ensure the cable will properly perform with the DIN1.0/2.3 connectors that support this size cable. Information on 1855A style connector is included below.

For large diameter cable, Belden 1694A is the cable Evertz uses as a reference but of course any cable with appropriately matching specifications to that of Belden 1694A cable will work. Information on 1694A style connectors is included below. There are several other types of connectors available from different manufacturers, which meet the DIN1.0/2.3 specification, and these connectors will work too. We offer this information on 3rd party connectors as a result of empirical anecdotal testing and not as an endorsement of one vendor over another. Please contact Evertz for further support or information regarding DIN Specifications.

1.2. ITT Cannon DIN1.0/2.3 Connector Details

The Cannon 75 _ 1.0/2.3 connector series are widely used in applications requiring a high density solution and have become a standard in telecommunications in many parts of the world. Designed to meet the requirements of DIN 47247 and CECC 22230, these connectors feature a push/pull coupling mechanism to ensure mating integrity and a snap-on interface for ease of connection. Due to their small size these connectors can be densely packed while providing significant space savings over other 75Ω connector products.

Connectors and Tooling are available from ITT Cannon or your local ITT Cannon distributor. Additional information can be found at ITT Cannon's website: www.ittcannon.com under: products, RF75, 1.0/2.3

Electrical	
Impedance	75 Ω nominal
Frequency Range	With 75 Ω connector on 75 Ω cable = 0 -2 GHz
Voltage Rating	At Sea Level = 250 Vrms
Insulation Resistance	1000 M Ω minimum
Contact Resistance	Inner contact = 6 m Ω typical maximum Outer contact = 2.5 m Ω maximum
With 75 connector on 75 Ω cable and F=1GHz	0.1 maximum
Mechanical	
Withdrawal Force, inner female contact	0.2 N (0.04 lbs.) minimum
Withdrawal force, outer male contact	0.7 N (0.15 lbs.) minimum
Insertion force between jacks and plugs	10 N (2.24 lbs.) maximum
Withdrawal force between jacks and plugs	0.9 N (0.20 lbs.) minimum
Materials	Bodies and nuts: Brass
	Inner male contact: Brass of Berylium Copper.
	Inner and outer female contacts:Berylium Copper.
	Insulators: PTFE or Thermoplastics
	Crimp ferrules: Copper alloy
Finish / Plating:	Contact surfaces: Gold over Nickel.
	Bodies and crimp ferrules: Nickel or Gold over Nickel
Environmental	
Temperature Rating	-40 degrees C to 85 degrees C
General	
Connector Durability	500 matings minimum
Standards	CECC 22230, DIN 47297, RC9333 (T54 only)

1.3. ITT Cannon DIN1.0/2.3 Assembly Details

ITT

JAYS CLOSE,
VIABLES INDUSTRIAL ESTATE,
BASINGSTOKE. UK.
RG22 4BA

No. BBAI-1269 iss/rev H

ECO/DCN K5861

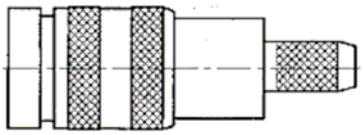
Dimensions in: mm

ASSEMBLY INSTRUCTIONS

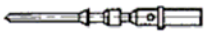
1.0/2.3 Full Crimp\Solder Crimp Straight Plug Connector

IF IN DOUBT ASK

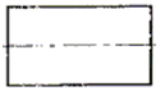
Tools Required: Locator: T4852 Crimp Tool: See Table.



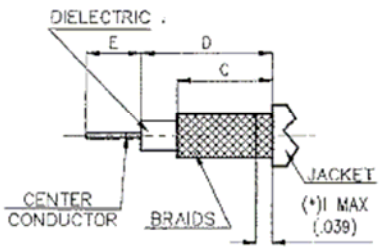
BODY ASSEMBLY



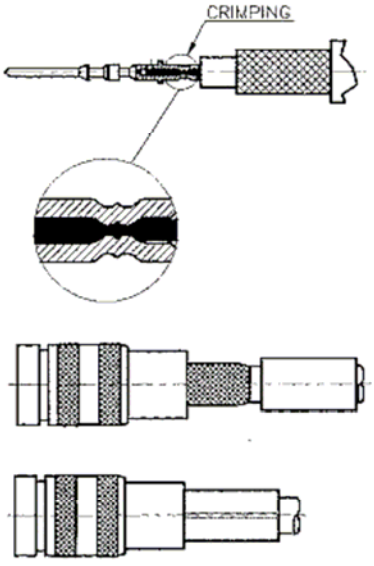
INNER MALE CONTACT



FERRULE



(*) TRIM THE INTERMEDIATE FOIL TO THE INDICATED DIMENSION.



1. Prepar cable to the dimensions shown, being careful not to damage the braid, dielectric, foil or inner conductor.

Stripping Detail	C	D	E
A	6.00(.236)	8.30(.327)	3.50(.138)
B	8.00(.315)	10.50(.413)	3.50(.138)

For cables with a foil under the braid, spread braid and trim back to dimensions shown. Except RA 7000 cable where the foil should be left in place over the dielectric.

2. Crimp contact on to inner conductor using a M22520/2-01 (ITT Cannon part number 995-0001-584) set to the selector number shown in the table below, fitted with positioner T4852. Ensure that the conductor is visible through the inspection hole in the side of the contact. This contact may also be soldered.

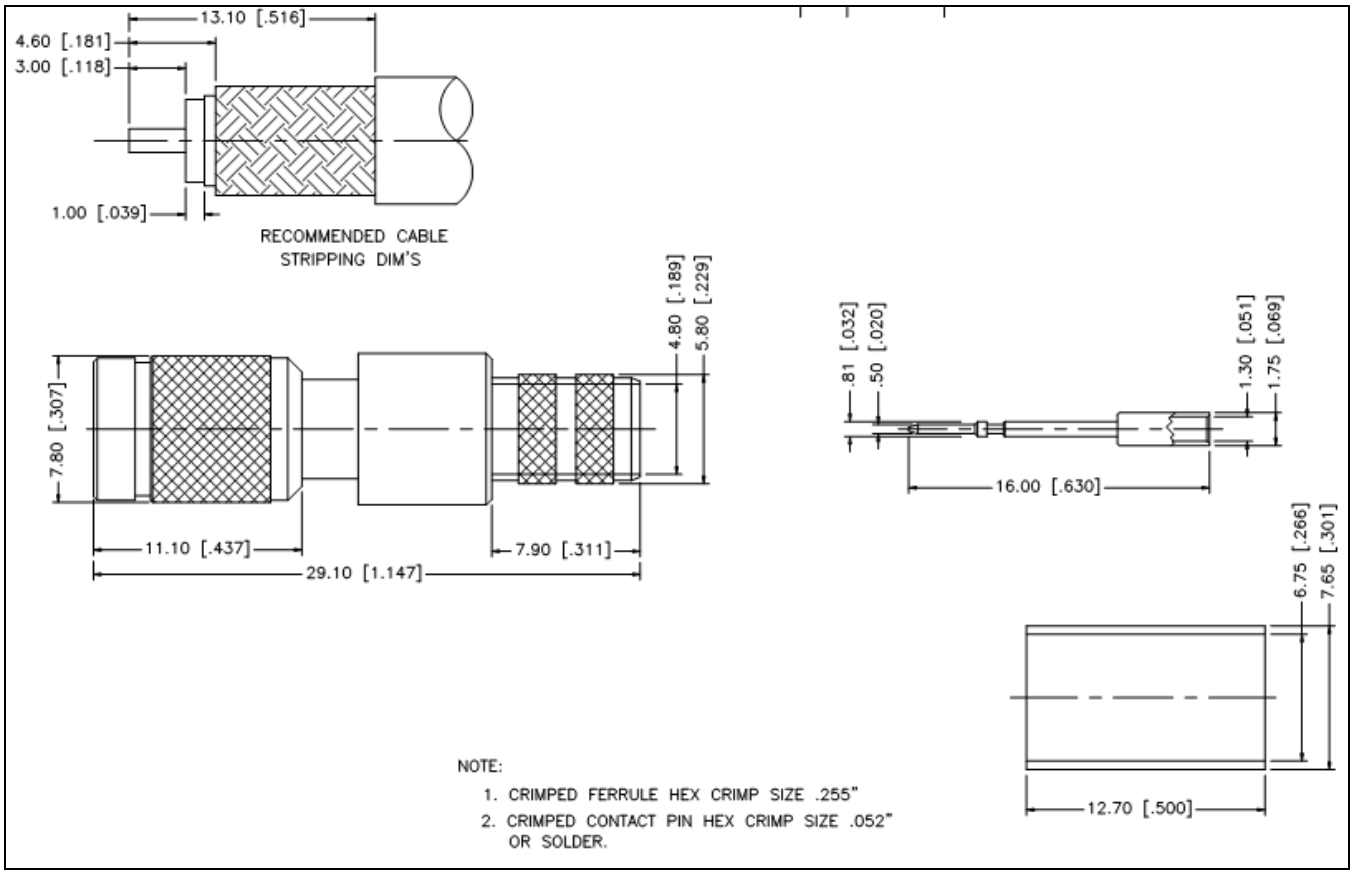
3 Place the crimp ferrule over the cable sheath.

4. Fit the connector body onto the cable/conductor so that the rear body slides between the dielectric and braid (gently twisting and rocking the connector body to spread the braids will help). Push home until a click is felt.

5. Slide the crimp ferrule forward, over the braid until it butts against the rear of the connector. Crimp using ITT Cannon crimp tool T1025/- fitted with a suitable die set (see table).

Cable Type	Stripping Detail	Selector Setting	Die Size	Die Part Number
A (0.4/2.4)	B	3	5.4 (.213)	K29265
B (0.25/1.45)	A	3	3.25 (.128)	K29263
BT3002	A	3	4.3 (.170)	T1025/36
FLEX 2	A	3	3.25 (.128)	K29263
RA7000	B	4	5.18 (.204)	T1025/6
RA8000	A	3	3.25 (.128)	K29263
RD179	A	3	3.84 (.151)	T1025/9
RG179	A	3	3.25 (.128)	K29263
ST212	A	3	3.8 (.151)	T1025/9
TZC75005	B	4	6.5 (.255)	T1025/11
1855A	B	4	5.4 (.213)	K29265

1.4. Evertz OEM DIN1.0/2.3 Connector Details (CRIMP/CRIMP) for 1694A Assembly Details



1.5. White Sands DIN1.0/2.3 Connector Details (1 piece CRIMP) for 1855A

SPECIFICATIONS

Impedance	75 Ohm
Frequency Range	DC – 3.0 GHz (dependent upon cable limitations)
Insertion Loss	<0.1dB @ 1 GHz
Cable Retention Force	> 40 lbs.
Center pin retention	> 150 grams
Mating style	Positive locking
Current Rating	2 Amps
Working Voltage	< 300 vrms
Center Conductor Contact & plating	Phosphor Bronze with Gold Plate
Body Material	Brass
Body Plating	Nickel
RFI	> 85dB

White Sands Engineering's 1.0/2.3FP plug features a fixed pin, one-piece design which can be installed quickly and reliably in the field. It is compatible with our YR46940 mini RG59 precision video cables as well as Belden 1855A, Gepco VDM230, Commscope 7538B, Coleman 99401. White Sands can provide connectors and tools, or cable assembles terminated with 1.0/2.3FP or other connectors as needed.

For more information on the 1.0/2.3FP and our entire line of fixed pin, one-piece connectors for mini RG59, visit our website at www.whitesandsengineering.com.

1.6. White Sands DIN1.0/2.3 Connector Details (1 piece CRIMP) for 1855A Assembly Details

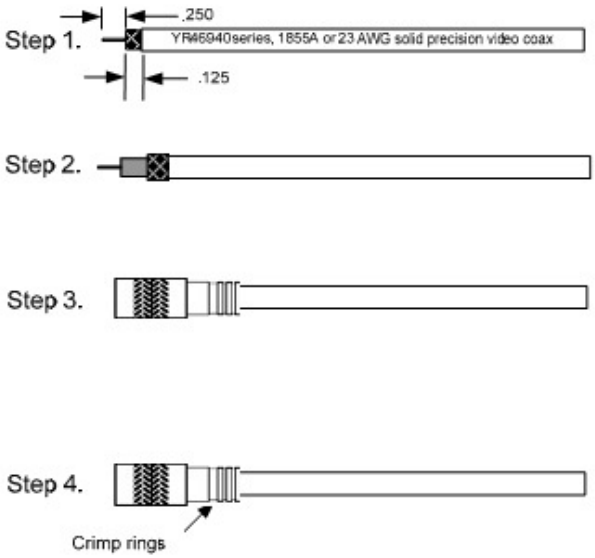
STEP 1: Use CPT7538125 tool to strip cable to proper dimensions as shown. Make sure there is no braid wrapped around the center conductor creating a short.

STEP 2: Fold Braid back over jacket. Leave foil on dielectric, ensuring foil is smooth all around dielectric.

STEP 3: Insert the center conductor and dielectric with foil into the center diameter of connector. Push connector onto the cable while rotating the connector ½ a turn. Ensure cable is inserted completely into the connector with no braid visible behind the connector.

Note - Continuity test cable before crimping to ensure a good connection.

STEP 4: Crimp one time on all 3 rings of the connector where shown using the .213 die on the ACT483 crimp tool.



The positive locking mechanism in this connector ensures secure mating that will not be affected by vibration or accidental tugs on the cable. Connectors can only be unmated from high density panels using the 1.0REMTOOL.

1.0/2.3FP CABLE ASSEMBLY TOOLS

CPT7538125 Strip tool, 1/4" x 1/8" for mini RG59 cable

ACT483 Crimp tool, .270" and .213" hex dies for mini RG59 connectors

1.0REMTOOL Removal tool for 1.0/2.3FP connectors