



A **BELDEN** BRAND

Application Note

# DIN 1.0/2.3 Coaxial Connectors

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## Introduction

The DIN 1.0/2.3 coax connector was originally introduced as a solution for the southern European telecommunications market in the 1980s. Since then, millions of these connectors have been installed in central offices worldwide.

The DIN 1.0/2.3 connector was developed to perform as a 75Ω connector that supports high data rates. This makes the connector an ideal solution for digital broadcast signal formats such as AES audio, SD video, HD video, and 3 Gb/s video, especially in high-density assemblies.

DIN 1.0/2.3 connectors were originally deployed on the NV7512 audio router. Typical installations use Belden 1855A cable terminated with mating DIN 1.0/2.3 male connectors on one end and male BNC connectors on the other. This system provides twice the density of a comparable BNC solution.

Starting with the award-winning NV8288 truck router and now the NV8500 series digital routers, Miranda's NVISION series routers now offer *triple* the connector density compared to BNC based frame designs.

## Features and Benefits

The connector is based on a simple push-pull latching design providing these benefits:

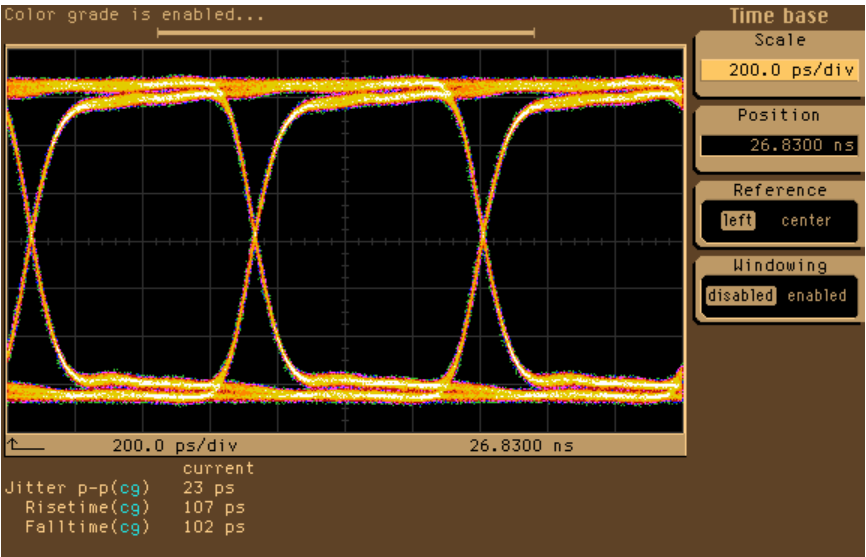
- Quick installation.
- Safe connector coupling.
- Vibration resistance. It cannot vibrate loose like an unlatched BNC.
- Connectors can be laid out in pitch densities as small as 8mm providing *triple* the density of BNC layouts.
- The connectors use the same stripping and crimping process as BNC connectors, making them easy to learn for experienced broadcast cable installers.
- The connectors support industry-leading Miranda signal quality.

# DIN 1.0/2.3 Coaxial Connectors

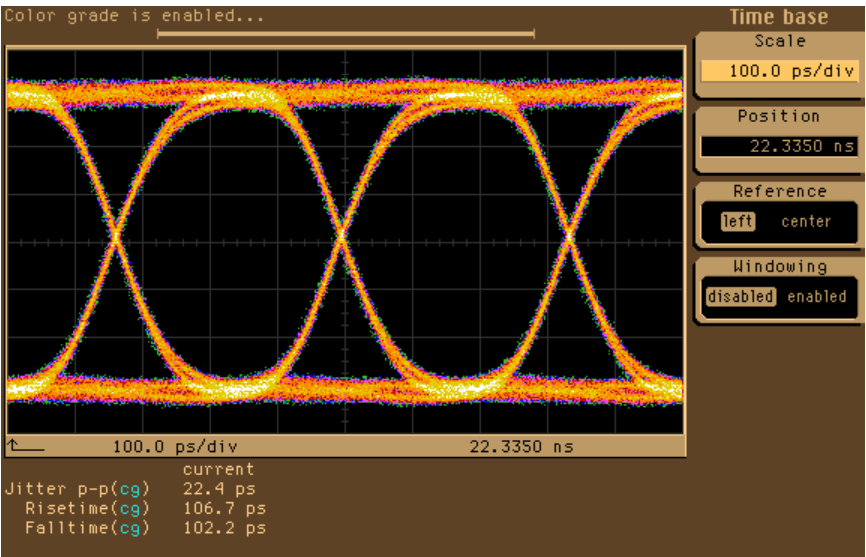
## Eye Pattern

### Eye Patterns

This is an 800mV BERT signal at 1.485Gb/s, passed through a DIN 1.0/2.3 input connector, equalizer, cable driver, and DIN 1.0/2.3 output connector:



This is a 3Gig (2.97Gb/s) signal:



## Mating Connectors

Cable types include:

- Argosy Image 360
- Belden 1855A
- Belden RG 179DT
- Gepco VDM230

Male mating connectors for Belden 1855A and Gepco VDM230 cable are available through connector distributors and from Miranda.

## Assembly

As mentioned, DIN 1.0/2.3 connectors terminate with the same process as BNC connectors.

- ▲ A visual inspection of the male center conductor for straightness and non-protrusion beyond the connector collar is recommended to avoid bent pin errors. (See [Assembly](#).)
- ▲ **Caution:** It is recommended that a mating connector adapter be used for continuity testing because the insertion of a test probe directly into the connector can bend the center conductor pin.

The following sections—listed by company name in alphabetical order—provide detailed installation, tooling, and performance information.

- [ITT](#)
- [Tyco](#)
- [White Sands Engineering](#)
- [Winchester Electronics](#)

## Contact

Don Morgan,  
Sr. Applications Engineer  
(530) 265-1011

ITT

Assembly  
The following diagram is an excerpt from ITT's data sheet:

ITT Cannon

RF PRODUCTS

Jays Close, Vachon Estate,  
Basingstoke, Hants, RG 22 4BA, UK

585 East, main Street, New Britain,  
Connecticut 06051, USA  
(FISCH No. 96291)

Part

BBAI-1269-GB

Issue

H

Sheet 1 of 1

Dimensions in: mm

ASSEMBLY INSTRUCTIONS

Connector Type: 1.0/2.3 full-crimp holder crimp straight plug

Cable Type: see table

Tools Required: Locator: T4852, Crimp Tool: see table

BODY ASSEMBLY

INNER MALE CONTACT

FERRULE

DIELECTRIC

E

D

C

JACKET

CENTER CONDUCTOR

BRAIDS

Important: you must  
prep cable to these  
dimensions

CRIMPING

Center pin should never  
protrude outside of  
coupling not. If it does  
you need to discard  
connector and re-  
terminate a new one.

Bad

Good

Illustration of proper center pin  
position inside connector body

Stripping Detail

C	D	E
.315 (8.00)	.413 (10.50)	.138 (3.50)

1. Prepare cable to dimensions shown, being careful not to damage the braid, foil or inner conductor. **Important:** Do not nick braid and center conductor of cable.

2. Position center contact as shown. Make sure center conductor of cable is visible inside hole of contact pin. Crimp center contact on to cables center conductor using ITT crimp frame 995-0001-584 (M22520/2-01) fitted with ITT positioner T4852. **Important:** Make sure the selector setting on the tool is set at number 4. Perform a light pull test to verify termination.

3. Slide ferrule onto cable and flair braid to facilitate insertion of body.

4. Insert rear post of body between the cables foil and braid until the center contact snaps into position. **Important:** Perform a light pull test to verify the center contact is seated and check interface to make sure center pin is straight.

5. Dress braid evenly around rear post. Slide ferrule over braid until it rests flush against body. Crimp ferrule with 213 (5.4) hex die (ITT P/N K29265) fitted onto crimp frame (ITT P/N T1025- ). Perform light pull test and visually inspect finished assembly.

Tooling Parts List

ITT P/N 995-0001-584 Center Pin Crimp Frame only

ITT P/N T4852 Center Pin Positioner (fitted onto crimp frame 995-0001-584)

ITT P/N T1025- Crimp Frame only for ferrule. Hex Die not included

ITT P/N K29265 - 213 hex die (fitted onto crimp frame T1025/-)

ITT P/N T4869 Connector Insertion/Extraction Tool

4 Rev 2.4 • 09 Nov 12

## Connectors and Tool Kit

Belden 1855A Cable (Gepco VDM230):

Pin Crimp Tool:	Daniels M22520/2-01
Crimp Setting:	Turret set to 4
Pin Positioner:	Daniels K1335
Hex Crimp Die:	0.213" (Paladin 2653)
Strip Tool:	Paladin model Vario 3240
Strip Dimensions:	See assembly instructions

## Contact

(Tooling)

Al Mahon, for Paladin, at Newark  
1-800-263-9275Terry Myers, at Daniels  
1-407-855-6161

(Connectors)

U.S.  
George Blazas  
ITT Industries  
(860) 945-0206UK  
Graham Oakley  
ITT Industries  
+44-1256-323356


# DIN 1.0/2.3 Coaxial Connectors

Assembly

Tyco

## Assembly

This and the next illustration are excerpts from the Tyco datasheet:



DIN 1.0 / 2.3 (75Ω) Connectors

Application Specification

**114-71037**

16DEC2005 Rev. A

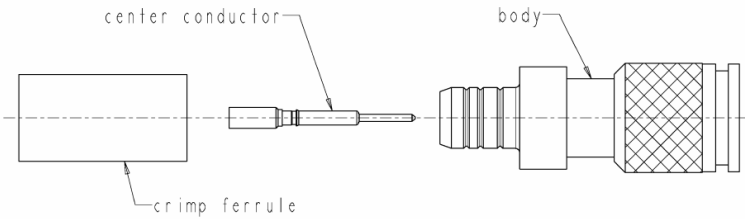
### 1. INTRODUCTION

This specification covers the requirements for application of Tyco Electronics DIN 1.0 / 2.3 (75Ω) straight cable jack and plug connectors. The cable is connected by crimping the cable braid to the plug or jack body and also the inner conductor is crimped with 8 indent tool.

The component drawings may differ from the parts supplied.

### 2. DATA TABLE

PART NUMBER	CABLE	OUTER CONTACT CRIMP TOOL	CENTER CONTACT 8 indent CRIMP TOOL	DIM. TABLE FOR CABLE PREPARATION	INTERMED. LAYER
619226-1	Belden 1855A or Gepco VDM230	734595-1 hex 4.47	986651-1 pos. 4 Use positioner K41	3.1.1.1	Yes



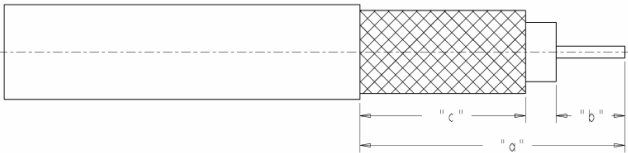
### 3. INSTRUCTIONS

#### 3.1 Prepare cable

- Prepare the cable according to the dimension table 3.1.1.
- It's recommended not to remove the foil; if that causes problems with high voltage performance you can remove the foil up to the braid but leave the foil beneath the braid.
- Slide crimp ferrule over

#### 3.1.1 Dimension table (recommended dimensions)

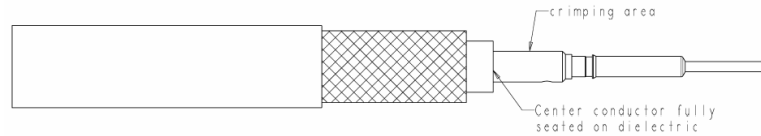
DIMENSION	"a"	"b"	"c"
3.1.1.1	10 +0/-0,2	3 ±0,2	6 +0/-0,5



This is a continuation from the previous page:

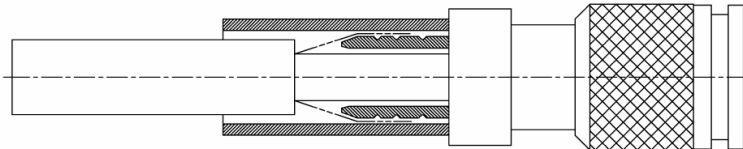
### 3.2 Crimp on center conductor

- Slide center contact over cable center conductor.
- Make sure that the center conductor butts on the cable dielectric.
- Crimp center conductor as close as possible to the dielectric of the cable; using the appropriate crimp mentioned in the data table section 2 page 1.



### 3.3 Contact assembly

- Flare braid and insert contact into the crimp of the body. The contact must bottom on the internal dielectric of the connector.
- Slide the crimp ferrule over the braid until it bottoms against the body. Crimp the ferrule using the appropriate crimp dies mentioned in the data table section 2 page 1.



## Connectors and Tool Kit

Belden 1855A Cable (Gepco VDM230):

Pin Crimp Tool: Daniels M22520/2-01  
 Crimp Setting: Turret set to 4  
 Pin Positioner: Daniels K41  
 Hex Crimp Die: 0.178" (Paladin 2653)  
 Strip Tool: Paladin model Vario 3240  
 Strip Dimensions: See Tyco assembly instructions

## Contacts

(Tooling)

Al Mahon, for Paladin, at Newark  
 1-800-263-9275

Terry Myers, at Daniels  
 1-407-855-6161

(Connectors)

TTI  
 Jim Sherba  
 jim.sherba@ttinc.com  
 916-987-4610 (direct)

# DIN 1.0/2.3 Coaxial Connectors

## Assembly

### White Sands Engineering

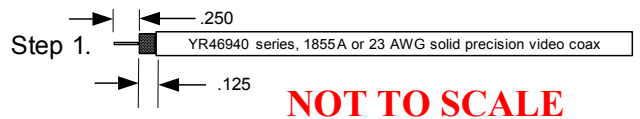
White Sands Engineering's 1.0/2.3FPB plug features a fixed pin, one-piece design that can be installed quickly and reliably in the field. It is compatible with the YR46940 mini RG59 precision video cables as well as Belden 1855A, Gepco VDM230, Commscope 7538B, and Coleman 99401. The small profile of this connector supports high-density broadcast applications such as Miranda's NV8288 digital video router. White Sands can provide connectors and tools, cable assemblies terminated with 1.0/2.3FPB, and other connectors as needed.

#### Assembly Instructions for 1.0/2.3FPB Plug to Mini RG59 Cable

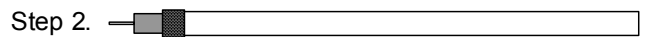
The positive locking mechanism in this connector ensures secure mating that will not be affected by vibration or accidental tugs on the cable. Connectors can only be unmated from high density panels using the "1.0REMTOOL."

This is an excerpt from the White Sands documentation.

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 .

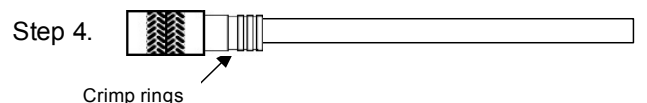


STEP 3: Insert the center conductor and dielectric with foil into the center diameter of connector . Push connector onto the cable while rotating the connector 1/2 a turn . Ensure cable is inserted completely into the connector with no braid visible behind the connector .



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.





## Tooling

**1.0/2.3FP Cable Assembly Tools**

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



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ACT483 Crimp tool,  
0.270" and 0.213"  
hex dies for mini  
RG59 connectors



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1.0REMT00L Removal tool  
for 1.0/2.3FP con-  
nectors



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**Contact (Tools and Connectors)**

U.S.	UK
Dave Lindemeyer	Jonathan Rigby
1-800-586-7377 x4210	jrigby@ashcomms.com
	+44-07803-280426

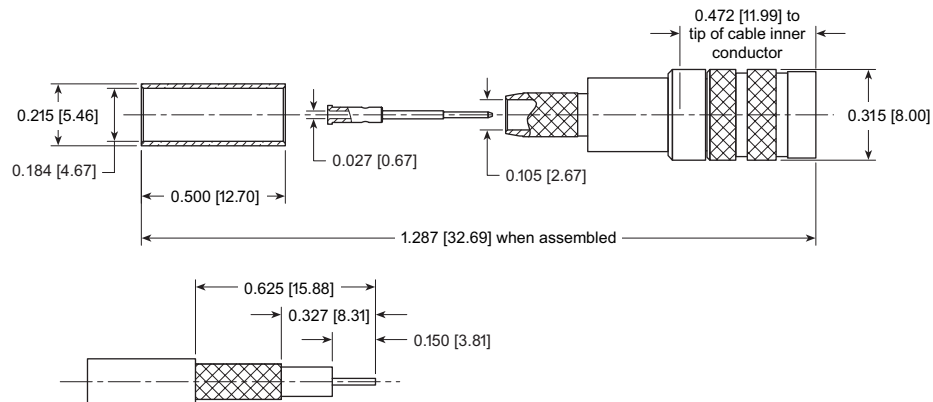
# DIN 1.0/2.3 Coaxial Connectors

## Assembly

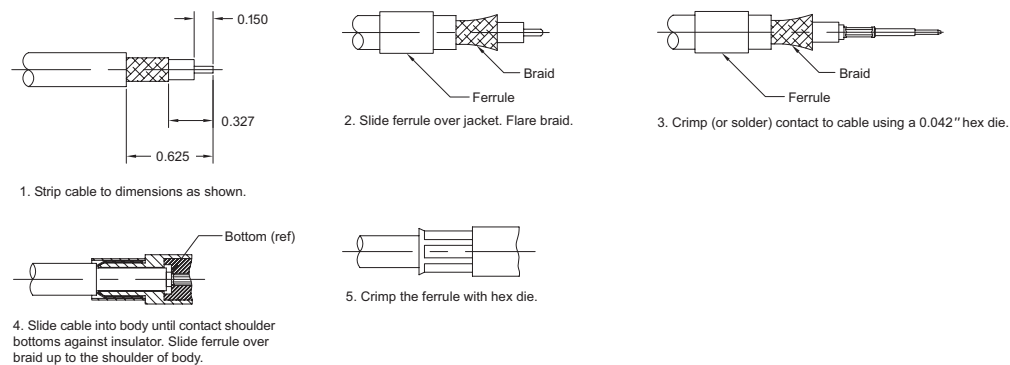
## Winchester Electronics

### Assembly

This drawing gives the connector dimensions:



This drawing shows the assembly steps:



### Connectors and Tool Kit

Belden 1855A Cable (Gepco VDM230):

Connector part no 0345-E00-C7202N  
Pin Crimp Tool: Winchester KTH-1000  
Crimp Die: KTH-2025 (braid 0.178" hex, contact 0.042" hex)  
Strip Dimensions: See drawings above.

### Contacts (for Tools and Connectors)

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