CANARE®

International Edition

21A

Digitally Fit!

www.canare.co.jp

Canare,

offering value-added products to meet your needs for today and tommorrow.

Canare Building in Nagoya

Five-point Product Development Goal

1 **Responsive**
Fulfilling the needs of the industry through custom solutions.

2 **Unique**
Incorporating valuable features not offered by competitors.

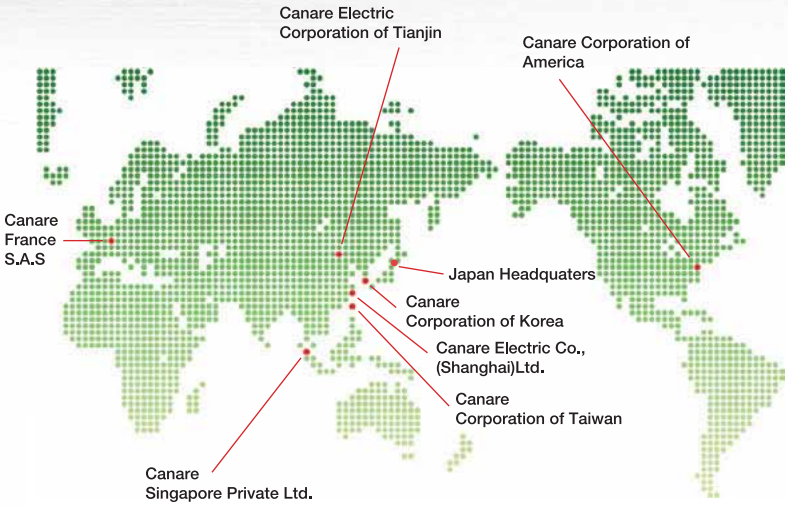
3 **Cutting-edge**
Devoted to meeting the requirements for emerging technologies.

4 **Enduring**
Concentrated on products with long-term value.

5 **Global**
Focused on niche markets as well as universal products.

Corporate Profile

- Name: Canare Electric Co., Ltd.
- Incorporated: February 1974 (Commenced operation 1970)
- Capital: 1.04 billion yen
- Activities: Manufacture and sale of audio-video cables, connectors, assemblies, converters and related products for professional audio and video industry.



Company Locations

Japan Headquarters (Overseas Department)
WN Bldg., 2-4-1 Shin-Yokohama, Kouhoku-ku, Yokohama-shi, Kanagawa, 222-0033 Japan
Phone: +81-45-470-5674 Fax: +81-45-470-5676

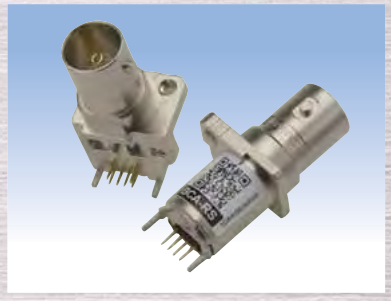
- Sales office in Japan: Yokohama, Nagoya (Sales and Warehouse), Osaka, and Fukuoka

Subsidiary Companies

• Canare Corporation of America	www.canare.com
• Canare Corporation of Korea	www.canare.co.kr
• Canare Corporation of Taiwan	www.canare.com.tw
• Canare Electric Corporation of Tianjin	www.canare.com.cn
• Canare France S.A.S	www.canare.fr
• Canare Singapore Private Ltd.	www.canare.com.sg
• Canare Electric (Shanghai) Co., Ltd.	
• Canare Harness Co., Ltd (Japan)	
• Canare System Works Co., Ltd (Japan)	
• Canare Tech Corporation (Japan)	

3G-SDI EO Converters

75Ω Active BNC Receptacles



75Ω Mid-size Video Jacks

Ethernet Cable

Cable Reel Snake

Cable Assemblies

CONTENTS

Optical Transmission Systems in the Age of 3G

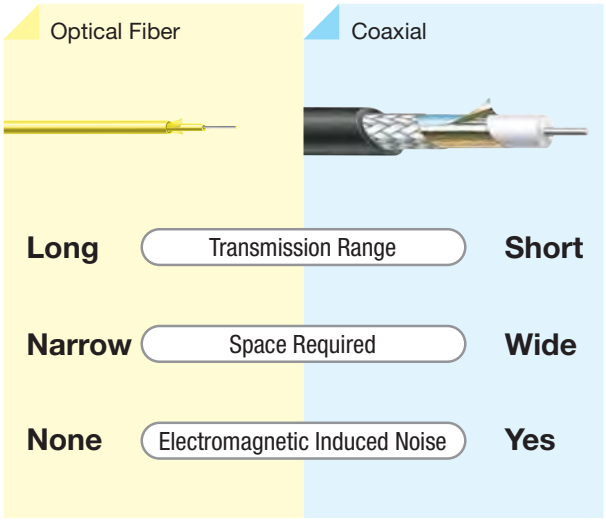
The Increasing Capacity of Transmission Signals

The current move toward HD digital signals carrying extremely fine quality data has been radically increasing transmission signal bandwidth requirements. Standards for serial video signal transmission with 4:4:4–sampled Y/PB/Pr, too, have lately been bumped to 3Gbps by the Society of Motion Picture and Television Engineers (SMPTE) in the United States. Given these industry trends, it's clear that the bandwidth for transmission signals used by broadcasters will only increase in coming years.

The Limitations of Coaxial Cables

Steadily increasing bandwidth requirements are already revealing limitations in conventional coaxial cables. Such systems are already becoming too unwieldy in terms of performance (attenuation), space factors, and equipment management.

Comparison of Cable Characteristics



Converting Trunk Lines to Optical Fiber

Trunk Lines Today

Trunk lines carry many different kinds of signals—video, synchronization, audio, control, power supply—and consequently they're usually comprised of numerous different types of cables. As a result, conduits, electrical pits, and ladders tend to overflow with cabling, leaving hardly any room when lines must be added to upgrade or expand the system.
But, converting these disparate signals into optical signals and transmitting them using fiber optic cables greatly reduces the need for so many specialized cables. Converting trunk lines to fiber optics makes it much easier to design and upgrade equipment and systems, because once laid these lines can be used with considerable flexibility. Fiber optic cables also have smaller diameters, meaning they take up less space, a clear advantage in alleviating some of the problems of today's cable-stuffed broadcasting facilities.

Freedom of Line & Equipment Layout

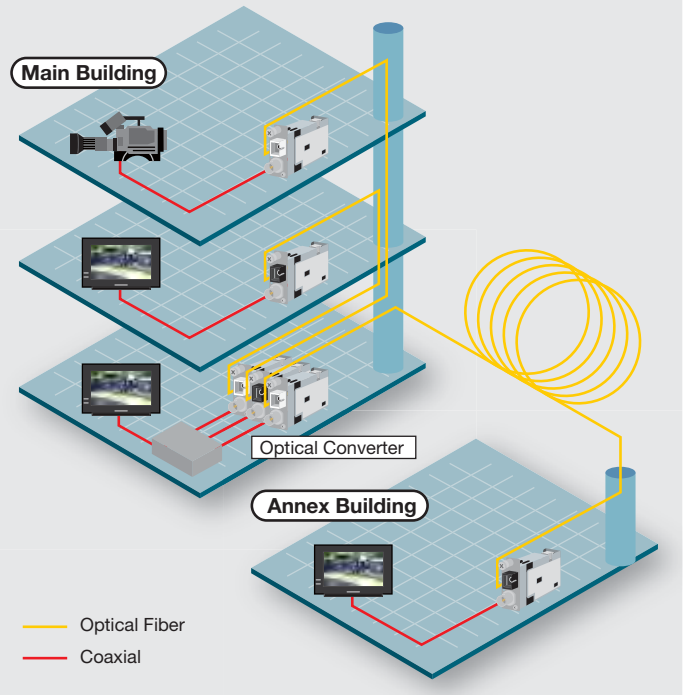
HD-SDI signals can travel only about 100 meters over standard coaxial cables (5C-FB). This means that when wiring rooms and buildings with coaxial cables, it's sometimes difficult to achieve an optimal layout or position equipment where it will be most convenient and useful.
Further, signal transmissions often need to cover unexpectedly long distances, and fiber optic cables, with their transmission distance measured in tens of kilometers, win hands-down over coaxial cables. This flexibility alleviates much of the conventional worry about cable routing and allows the equipment itself to take center stage.
The cost of optical signal converters has dropped radically, too—most can be had for a few hundred dollars—making it difficult these days to find reasons not to introduce fiber optic systems!

Cable Diameters

Even with 100 cores (lines), a fiber optic cable has an external diameter of just 11.5 mm. Compare that to a typical coaxial cable and the difference is clear.

Example of an Optical Fiber Trunk Line

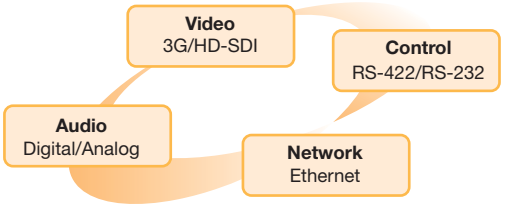
Fiber optic systems are used in signal transmissions within a single broadcast station, or between a main building and an annex building.



Diversified Needs for Optical Conversion

■ It is not just the HD-SDI signal

It is not just the HD-SDI signal that is converted into optical signals. For example, there is a case in which the HD-SDI signal is converted into optical signals along with the control signal to transmit video images during recording in a studio. Converting various signals into optical signals allows them to be transmitted through fiber-optic cables, eliminating the necessity of separately preparing metal cables.



■ Advantages of Fiber Optic Transmission in the Field

With it now so easy to convert transmissions into optical signals, fiber optic systems are better suited than ever to field recording applications. Newly developed extra-strong, extra-bendable optical fibers have finally reduced past concerns about cable durability, meaning that in applications like remote broadcasting, video, audio and other signals can all be transmitted on a single cable, one of the inherent merits of fiber optic systems.

Heavy-duty HFO Camera Cable

FCCA-7T-SC**
(See page 13)

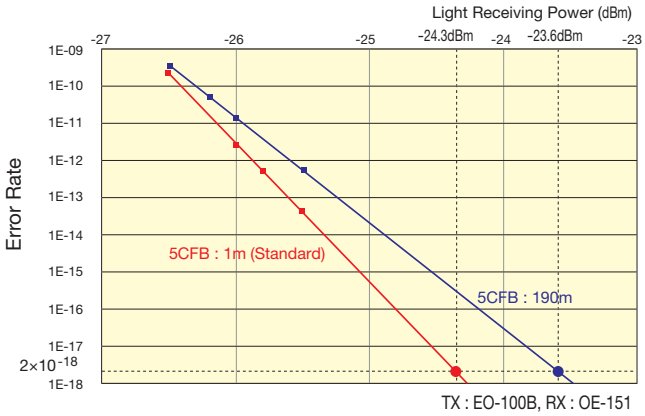
Important Fiber Optic Line Considerations

■ Minimum Light Receiving Power

In optical transmission, transmission quality is evaluated by the relationship between “light receiving power” and “error rate.” Error rate is dependent upon the signal to noise ratio (S/N), but since the noise level is thought of as being at a set level independent of the signal strength, the strength of the signal (light receiving power) at the receiver influences S/N considerably, in turn affecting the error rate. Therefore, to maintain a specified transmission quality, it is necessary to design light receiving power to be above the minimum light receiving power of the receiver.

The graph at right shows the light receiving power and error rate within the combination of the EO-100B and OE-151. From this graph, we can estimate that to get an error rate of 2×10^{-18} (to ensure a probability of 1 for transmission errors during 10 years of continuous operation), the light receiving power of the OE-151 must be set greater than -24.3dBm assuming the signal source and EO-100B are connected by a coaxial cable 1 meter in length (SMPTE connection standard). If the signal source and EO-100B are connected by a coaxial cable 190 meters in length, then the OE-151 light receiving power must be more than -23.6dBm, from which we can see that the light receiving power deteriorates by about 1dB as compared with the connection standard.

Light Receiving Power and Error Rate

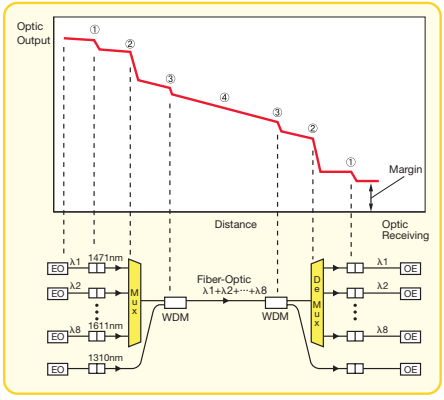


TX : EO-100B, RX : OE-151

■ Loss Budget (LB)

In EO/OE system design, 1) cable attenuation loss, 2) connector insertion loss, 3) fusion splice connection loss, and 4) Mux/DeMux insertion loss have to be calculated so that they are less than the loss budget (LB) of the optic link. For HD/SD-SDI system, since the Mux/DeMux loss is greater than that of the fiber attenuation loss, it would be essential you to consider such loss elements when you configure the system.

Loss Budget Diagram



Loss budget is the difference between the optical power output (P1) from the EO converter and the light reception sensitivity (P2) of the OE converter.

LB = P1–P2

Example) If the optical power output P1 = –3.5dBm and the reception sensitivity P2 = –24dBm:

LB = –3.5dBm – (–24dBm) = 20.5dB

Loss Attenuation

	Loss Factor	Value
①	Connector Insertion Loss	0.5dB/Point
②	Mux/De Mux	2~3dB/Point
③	WDM coupler	0.5dB/Point
④	Fiber Cable	0.3dB/km(*)
	Splitter	0.5dB/Main 10dB/Branch
	Divider	3dB/Point
	Fusion Splice Loss	0.2dB/Point
	System Margin	2~6dB

* 0.5~1.0dB/km for Dark fiber

EO/OE Converter Line-up

Canare's EO/OE product line-up has expanded. A large variety of signals can be sent over fiber-optic cables with a simple set-up. Canare EO/OE will break your system free from distance limitations, signal delays, and noise problems.

 **EO3G-100** Slot Occupancy: 1	3G-SDI (page 6)	 **OE3G-101** Slot Occupancy: 1
 **EO3G-200** w/Monitor Out Slot Occupancy: 2		 **OE3G-201** w/Monitor Out Slot Occupancy: 2
 **EO-100B**  **EO-100A-**** for CWDM Slot Occupancy: 1	HD-SDI (page 7)	 **OE-101B** Slot Occupancy: 1
 **EO-700** Slot Occupancy: 1	NTSC/PAL (page 7)	 **OE-701** Slot Occupancy: 1
 **EO-500-**** Slot Occupancy: 5	Digital Audio (page 8)	 **OE-501** Slot Occupancy: 5
 **TRM-540** Slot Occupancy: 5	Analog Audio (page 8)	 **TRM-541** Slot Occupancy: 5
 **TRM-210** Slot Occupancy: 2	100BASE-TX (page 9)	 **TRM-211** Slot Occupancy: 2
 **TRM-220** Slot Occupancy: 3	RS-422/232 (page 9)	 **TRM-221** Slot Occupancy: 3

Install

Platforms (page 10)

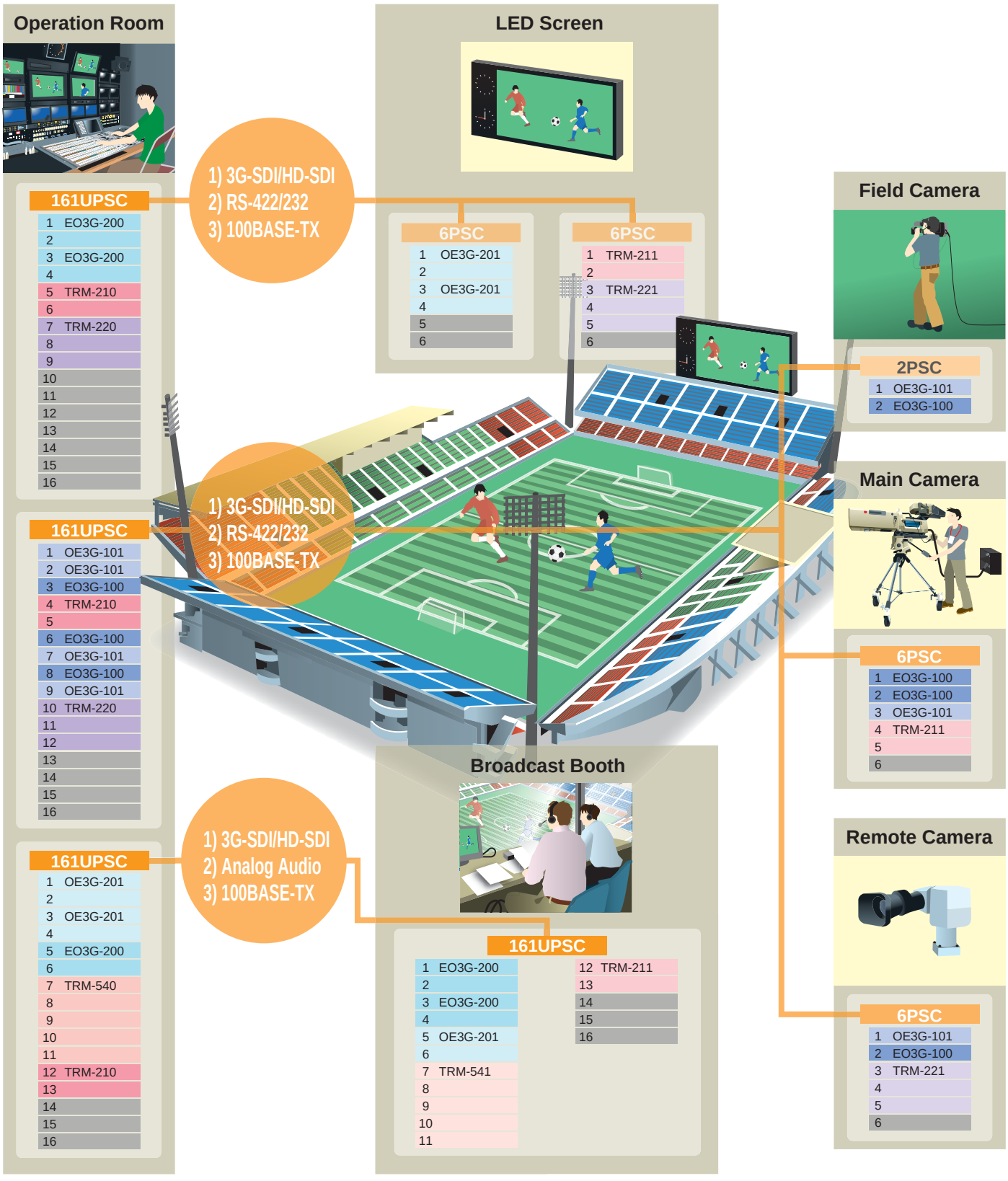
161UPSC
Number of Slots: 16

6PSC
Number of Slots: 6

2PSC
Number of Slots: 2

Welcome to a Canare EO/OE Stadium

Please take a look at how a Canare EO/OE system fits perfectly in a modern stadium that handles variety of signal formats such as 3G-SDI/HD-SDI, RS-422/232, 100BASE-TX, and analog audio.



Canare EO/OE products offer smart solutions to stadium or arena AV systems which require broadcast quality video, audio, and data signals. Plug-and-play modular style optical converters can be easily installed. Fiber optic cable based distribution has many advantages, such as long distance transmission, low latency, noise free, and much more!

3G-SDI EO/OE Converters

NEW

Canare EO3G/OE3G series, the new line of 3G-SDI capable optical converters are ideal for applications that require the signal quality and integrity to be at its best over long distance transmissions such as in mobile productions, event venues, and within or between broadcast facilities.

■ Electric to Optic Converter (TX)

Model	Wavelength	Emission	Monitor Out	Occupancy
EO3G-100	1310 nm	-5 dBm	No	1 slot
EO3G-200			Yes	2 slot

■ Optic to Electric Converter (RX)

Model	Wavelength	Sensitivity	Monitor Out	Occupancy
OE3G-101	1200-1620 nm	-22 dBm	No	1 slot
OE3G-201			Yes	2 slot

Key Features and Benefits

- Multi format - 3G-SDI, HD-SDI, SD-SDI, and DVB-ASI
- EO3G-200 and OE3G-201 are equipped with Monitor output port.
- Super low-latency
- Compact size
- Easy to use; requires no complicated settings.
- Supports pathological test pattern
- Cost effective

■ Specifications

Model	EO3G-100	EO3G-200	OE3G-101	OE3G-201
Convertibility	Electric to Optic		Optic to Electric	
Wavelength	FP-LD 1310 nm		PIN-PD 1200-1620 nm	
Emission/Sensitivity	-5 dBm		-22 dBm	
Optical Connector	1 x LC (output)		1 x LC (input)	
Fiber Type	Single Mode			
SDI Input	1 x 75 Ω BNC	1 x 75 Ω BNC	N/A	N/A
SDI Output	N/A	1 x 75 Ω BNC (no-reclocked)	1 x 75 Ω BNC	2 x 75 Ω BNC
Slot Occupancy	1	2	1	2
Dimensions (mm)	17 x 43.4 x 78.4	35.5 x 43.4 x 78	17 x 43.4 x 78.4	35.5 x 43.4 x 78
Weight (approx.)	100 g	150g	100 g	150g
Typical Compliances	SMPTE 259M, 292M, 297-2006, 424M, BTA S-004C, EN50083-9, FDA, IEC 60825-1, FCC Part 15 Class A, UL/cUL, CB, CE, RoHS		SMPTE 259M, 292M, 297-2006, 424M, BTA S-004C, EN50083-9, FCC Part 15 Class A, UL/cUL, CB, CE, RoHS	

EO3G-100
(TX)

EO3G-200
(TX with Monitor Output)

OE3G-101
(RX)

OE3G-201
(RX with Monitor Output)

3G-SDI Repeater

NEW

Equalizes and reclocks 3G/HD/SD-SDI signals to extend the transmission distance over a coaxial cable.

Model	Support Formats/Rates	Occupancy
EE3G-100	3G-SDI, HD-SDI, SD-SDI, DVB-ASI	1 slot

Key Features and Benefits

- Typical cable equalization: 100 m of L-5CFB in 3G-SDI
- Supports 3G/HD/SD-SDI and DVB-ASI
- Passes embedded audio
- Allows for efficient use of existing cable infrastructure.

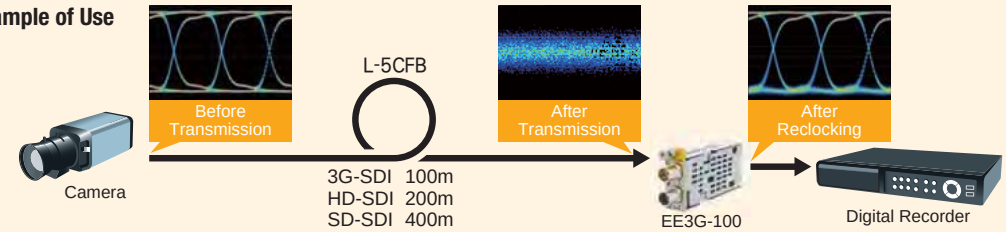
■ Specifications

I/O Connector	2 x 75 Ω BNC
Typical Compliances	SMPTE 424M, 292M, 259M, BTA S-004C, EN50083-9, FCC Part 15 Class A, UL/cUL, CB, CE, RoHS

EE3G-100

Dimensions : 17 x 43.4 x 78.4 mm
Weight : 85g

Example of Use



Note: Platform (power supply) is required to use Canare converters (see page11).

HD-SDI EO/OE Converters

■ Electric to Optic Converters (TX)

Model	Wavelength	Emission	Reclocker	Occupancy
EO-100B	1310nm	-3.5 dBm	Yes	1 slot
EO-160			N/A	

■ Electric to Optic Converters for CWDM (TX)

Model	Wavelength	Emission	Reclocker	Occupancy
EO-100A-**	1271-1611 nm *	-2.5 dBm	Yes	1 slot

* Refer to the following information to specify the wavelength.

■ Optic to Electric Converters (RX)

Model	Wavelength	Sensitivity	Reclocker	Occupancy
OE-101B	1200 to 1620nm	-24 dBm	Yes	1 slot
OE-151			N/A	

★ Production by order. Please ask us for ordering lot.

Key Features and Benefits

- Multi format - HD-SDI (up to 1.485Gbps), SD-SDI and DVB-ASI
- Embedded audio capable
- Handles pathological test pattern
- No-reclocker models support wide bit rate range. (50Mbps to 1485Mbps)
- Compact design - Maximum 16 mudules within 1RU
- Hot swappable
- Cost effective
- Easy to use - BNC and SC-type connector.

■ Specifications

Model	EO-100B	EO-160	EO-100A-**	OE-101B	OE-151
Convertibility	Electric to Optic			Optic to Electric	
Fiber Type	Single Mode				
Optical Connector	1 x SC (output)			1 x SC (input)	
SDI Connector	1 x 75 Ω BNC (input)			1 x 75 Ω BNC (output)	
Typical Compliances	SMPTE 259M, 292M, 297-2006, BTA S-004C, EN50083-9, FDA, FCC Part 15 Class A, UL/cUL (*), CB, CE, RoHS			SMPTE 259M, 292M, 297-2006, BTA S-004C, EN50083-9, FCC Part 15 Class A, UL/cUL, CB, CE, RoHS	

* Excluding EO-100A-27, EO-100A-29, EO-100A-31, EO-100A-33, EO-100A-35, EO-100A-37, EO-100A-43, and EO-100A-45.

EO-100B

EO-160

Dimensions : 17 x 43.4 x 78.4mm
Weight : 77g

EO-100A-**

Dimensions : 17 x 43.4 x 79.2mm
Weight : 58g

Ordering Information for EO100A-**

EO-100A - 47

Wavelength

27	1271nm	47	1471nm
29	1291nm	49	1491nm
31	1311nm	51	1511nm
33	1331nm	53	1531nm
35	1351nm	55	1551nm
37	1371nm	57	1571nm
43	1431nm	59	1591nm
45	1451nm	61	1611nm

OE-101B

OE-151

Dimensions : 17 x 43.4 x 78.4mm
Weight : 77g

Analog Video Optical Converters

Model	Wavelength	Emission	Sensitivity	Occupancy
EO-700	1310 nm	-3.5 dBm	N/A	1 slot
OE-701	1200-1620 nm	N/A	-26 dBm	

Key Features and Benefits

- Supports both NTSC and PAL video signals.
- Tri-Level Sync can be transmitted.
- Extends communications up to 45 km (condition: line loss 0.5dB/km)

Specifications

Model	EO-700	OE-701
Convertibility	Electric to Optic (TX)	Optic to Electric (RX)
Fiber Type	Single Mode	
Optical Connector	1 x SC (output)	1 x SC (input)
Video Connector	1 x 75 Ω BNC (input)	1 x 75 Ω BNC (output)
Typical Compliances	SMPTE 170M, ITU-R BT.470, CB, CE, UL/cUL, FCC Part 15 Class A, FDA, RoHS	

EO-700

OE-701

Dimensions : 17 x 43.4 x 78.4mm
Weight : 84g

Note: Platform (power supply) is required to use Canare converters (see page11).

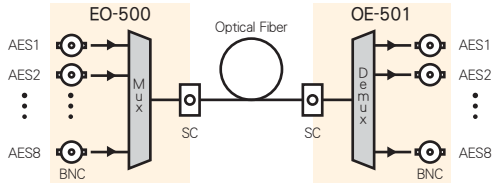
AES 3id Optical Converters

Model	Wavelength	Emission	Sensitivity	Occupancy
EO-500-**	1271-1611 nm *	-3 dBm	N/A	5 slots
OE-501	1200-1620 nm	N/A	-26 dBm	

* Refer to the following information to specify the wavelength.

Key Features and Benefits

- Multiplex and optically convert AES signals from up to 8 ports (16 audio channels) to allow them to be transmitted over long distance.
- Supports 8 wavelengths CWDM; enables max. 64 ports (128 audio channels) signlas to transmit over a single optical fiber.
- AES-3id-1995 and SMPTE 276M
- Fully asynchronous multiplex transmission.
- Word clock can be transmitted (30kHz to 50kHz).
- Dolby-E compatible



Specifications

Model	EO-500-**	OE-501
Convertibility	Electric to Optic	Optic to Electric
LD/PD	DFB-LD	PIN-PD
Fiber Type	Single Mode	
Optic Connector	1 x SC (output)	1 x SC (input)
AES I/O Connector	8 x 75Ω BNC (input)	8 x 75Ω BNC (output)
Typical Compliances	AES-3id-1995, SMPTE 276M, CB, CE, UL/cUL, FCC, FDA, EMC, IEC 60825-1 Class 1 Laser	

EO-500-55 OE-501

Dimensions : 76.2 x 43.4 x 91mm
Weight : 170g

Ordering Information

EO - 500 - 47

Convertibility Type

EO	Electric to Optic
OE	Optic to Electric

LD/PD Type

500	DFB-LD
501	PIN-PD

Wavelength (EO-500 Only)

47	1471nm
49	1491nm
51	1511nm
53	1531nm
55	1551nm
57	1571nm
59	1591nm
61	1611nm

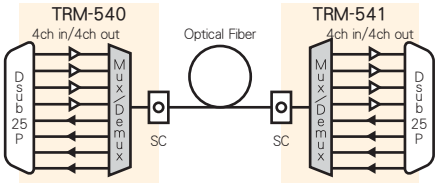
Analog Audio Optical Converters

NEW

Model	Wavelength	Frequency Response	Occupancy
TRM-540	1310 nm	20 Hz - 40 kHz (-3 dB, +0.1 dB)	5 slots
TRM-541	1550 nm		

Key Features and Benefits

- Enables line level audio signals to transmit long distance over a fiber-optic cable.
- 8 channel transmission (4-channel inputs/4-channel outputs)
- Maximum input/output voltage: +24 dBu (balanced)
- Supports 600 ohm input by each channel with selector switches.



Note: Please use TRM-540 and TRM-541 in pairs.

Specifications

Model	TRM-540	TRM-541
Fiber Type	Single Mode	
Optic I/O Connector	1 x SC	
Audio I/O Connector	1 x D sub 25 pin (F)	
Typical Compliances	UL/cUL, CB, CE, FDA, FCC Part 15 Class A, RoHS	

TRM-540 TRM-541

Dimensions : 91 x 43.4 x 78.4 mm
Weight : 265 g

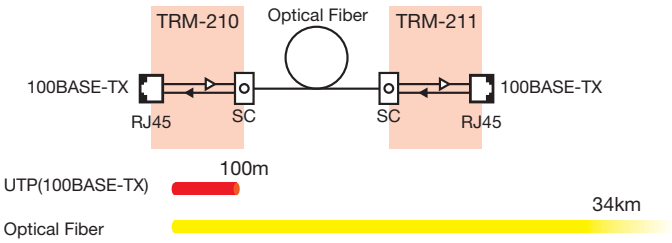
Note: Platform (power supply) is required to use Canare converters (see page11).

100BASE-TX Optical Converters

Model	Wavelength	Description	Occupancy
TRM-210	1310 nm	for 100BASE-TX only	2 slots
TRM-211	1550 nm		

Key Features and Benefits

- Media converters for Fast Ethernet 100BASE-TX*
  *Does not support other ethernet standards such as 10BASE-T/1000BASE-T.
- Auto MDI/MDX
- Extends communications up to 30 km (condition: line loss 0.5 dB/km)
- Bi-directional optical interface



Note: Please use TRM-210 and TRM-211 in pairs.

Specifications

Model	TRM-210	TRM-211
Fiber Type	Single Mode	
Optic I/O Connector	1 x SC	
Ethernet I/O Connector	1 x RJ45	
Typical Compliances	IEEE 802.3 1000BASE-TX, UL/cUL, CB, CE, FDA, FCC Part 15 Class A, RoHS	

TRM-210

TRM-211

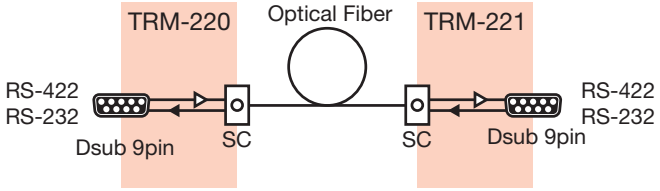
Dimensions : 35.5 x 43.4 x 76.2mm
Weight : 103g

RS-422/RS-232 Optical Converters

Model	Wavelength	Max. Data Rate	Occupancy
TRM-220	1310 nm	RS-422: 10 Mbps RS-232: 1 Mbps	3 slots
TRM-221	1550 nm		

Key Features and Benefits

- TIA-422, SMPTE 207M, RS-232
- Usable in a case of RS-422 <=> RS-232
- Extends communications up to 34 km (condition: line loss 0.5dB/km)
- Bi-directional optical interface



Note: Please use TRM-220 and TRM-221 in pairs.

Specifications

Model	TRM-220	TRM-221
Fiber Type	Single Mode	
Optic I/O Connector	1 x SC	
Control I/O Connector	1 x Dsub 9 pin (F)	
Typical Compliances	TIA-422, SMPTE 207M, RS-232C, UL/cUL, CB, CE, FDA, FCC Part 15 Class A, RoHS	

TRM-220

TRM-221

Dimensions : 54 x 43.4 x 76.2 mm
Weight : 110g

Note: Platform (power supply) is required to use Canare converters (see page11).

CWDM Mux/Demux

Canare CW series is bi-directional Mux/DeMux of up to 16 wavelengths. You can send/receive 16ch of HD-SDI signals in one fiber. Incredibly compact module FCWDM-8B enables 8 EO/OE modules and CWDM within 1RU frame.

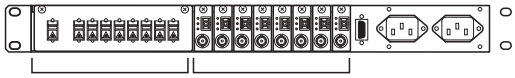
	Model	Description
★	FCWDM-8B	Module Type for 161UPSC, 1x 8CWDM
★	FCWDM8/1A	1RU Rack Mount Type, 1x 8CWDM
★	FCWDM8/2A	1RU Rack Mount Type, 2x 8CWDM
★	FCWDM16A	1RU Rack Mount Type, 1x 16CWDM

★ Production by order

Key Features and Benefits

- Bi-directional 8 or 16 wavelengths.
- Passive and stand-alone products.
- FCWDM-8B can be loaded into 161UPSC.
- Easy to use - Just plug in SC-type connectors.
- Cost Effective

<Loading example (rear view of 161UPSC)>



Mux/DeMux FCWDM-8B

EO Converter for CWDM EO-100A-47~61

Specifications

Model	FCWDM-8B	FCWDM8/1A (8/2A)	FCWDM16A
Wavelength	1471 to 1611nm		1271nm to 1611nm
Channel Spacing	20nm		20nm except for 1372 to 1431nm
Passband width	>15nm		>13nm
Insertion Loss	<2.0dB		<3.3dB
Isolation	>30dB		
Refection Attenuation	≥45dB		
Operating Temperature	0 to 70°C		
Dimensions	146x 43.4x 94.2mm	482.6x 44x 362.3mm	
Weight	255g	2520g (2696g)	2550g

FCWDM-8B
Slot Occupancy : 8 slots

(Rear View)

FCWDM8/1A

FCWDM16A **(Rear View)**

Optical Splitter

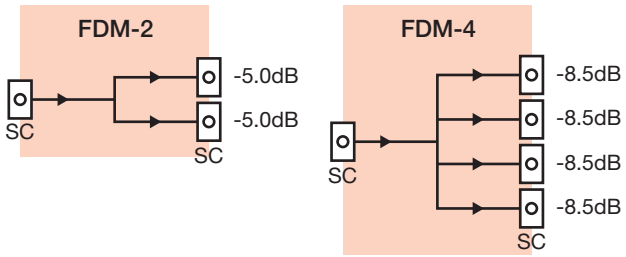
	Model	Wavelength	Description
★	FDM-2	1261 to 1611nm	1x2 Splitter for Single Mode Fiber
★	FDM-4		1x4 Splitter for Single Mode Fiber

★ Production by order

Key Features and Benefits

- Divides single optical input into multiple optical output.
- Passive and stand-alone products.
- Can be loaded into platform for Canare plug-in unit.
- Easy to use - Just plug in SC-type connectors.
- Low insertion loss.

Insertion Loss



FDM-2

Slot Occupancy : 3 slots
Dimensions : 54 x 43.4 x 82 mm
Weight : 83g

FDM-4

Slot Occupancy : 4 slots
Dimensions : 72 x 43.4 x 82 mm
Weight : 110g

Platform

Power supply for Canare plug-in modules. The robust 1RU rack mountable and space efficient portable types are available.

Model	Description	Number of Slots
161UPSC-**	1RU rack mount type	16
6PSC-**	Portable type	6
2PSC	Palm size	2
PSM2-**	Redundant power supply module for 161UPSC	N/A

* Please fill in the ** using the following Country code.

161UPSC - AU

Type

161UPSC
6PSC
PSM2

Region to use (see specifications below)

AU	Oceania
C	China
EU	EU
GB	United Kingdom
JP	Japan
K	South Korea, no power cord attached
UC	North America
N	No power cord attached

* Please contact us for more detail.

Key Features and Benefits

- Compact design - Maximum 16 modules within 1RU
- Hot swappable
- 161UPSC can be output 4 types of alarm signals via Dsub 9P (F).
- 161UPSC will require a PSM2 for power supply redundancy.

Specifications

Model	161UPSC	6PSC	2PSC
Number of Slots	16	6	2
AC Input Voltage	100 to 240V 50 / 60Hz 0.35A		N/A
DC Input Voltage	N/A	10 to 18V	10 to 18V
Max Power Consumption (exclusive of modules)	22W	4.5W (AC) 2.2W (DC)	2.2W
Power Connector	AC3P Jack	AC3P Jack (AC) XLR4 Male (DC)	XLR4 Male
Supply Voltage to Module	DC 5V		
Operating Temperature	-10 to 40°C		
Typical Compliance	CB, CE, UL/cUL, KC (161UPSC-K, 6PSC-K, PSM2-K), FCC15B Class A, RoHS		
AC Power Cord Plug Type	-AU -EU -GB -JP N/A -C -UC -K -N		N/A

161UPSC

Dimensions : 434 x 44 x 340 mm
Weight : 4500g

6PSC

Dimensions : 210 x 44 x 165 mm
Weight : 650g

2PSC

Dimensions : 90 x 44 x 110 mm
Weight : 200g

3G-SDI SFP Optical Transceiver

NEW

The Small Form-factor Pluggable transceiver module specified by MSA (Multi-Source Agreement). TRP-300 improves 3G/HD-SDI camera quality through its superior performance in wide range temperature.

Model	Wavelength	Emission	Sensitivity
★ TRP-300-LN13	FP-LD 1310nm	-5 dBm	-23 dBm

★ Production by order. Please contact us for ordering lot.

Key Features and Benefits

- Supports 3G/HD/SD-SDI
- Canare's exclusive "TC Tech" (Temperature-Compensation Technology)
- Log scale optical power monitoring
- Internal status monitoring via I2C bus

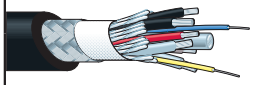
Specifications

Number of I/O ports	Input: 1, Output: 1
I/O Connector	LC
Fiber Type	Single Mode
Extinction Ratio	9 dB
Transmission Rate	50 Mbps to 2.97 Gbps
Pin Assignment	SFP MSA Compatible
Supply Voltage	3.3 V
Current Consumption	200 mA
Operating Temperature	-25 to 85 deg C
Complians	SMPTE 259M, 292M, 297-2006, 424M BTA S-004B, SFP MSA FDA 21 CFR Part 1040.10, 11 with Laser Notice No.50, IEC 60825-1: 2007, UL/cUL, DEMKO, CE, RoHS

TRP-300-LN13

Dimmensions: 13.9 x 11.85 x 56.5 mm
Weight: 22g

Hybrid Fiber-optic Camera Cables (SMPTE 311M)

Type	Model	Sales Units (m)	Nom. O.D. (mm)	Weight kg/100m	Outer Jacket	Overall Shield	Tension Tolerance (N)	Strength Member O.D. (mm)	Min. Bend Radius	Temp. Range (deg C)	Channel Unit		
											Fiber	Aux. (Power)	Signal (Control)
 L-2SM9N ★ Jacket color : black	LF-2SM9N NEW	Please contact us	9.2	12.0	Abrasion-resistance PVC	9/24/0.10TA 91%	700	2.6	6 x Nom. O.D.	-40 to +75	2 x SM 9/125 (low-water-peak) Unit O.D. 0.9 mm	4 x 20 AWG 21 / 0.18TA Unit O.D. 1.7 mm	2 x 25 AWG 7 / 0.18TA Unit O.D. 1.2 mm
	LF-2SM9				Smooth PVC								
	LF-2SM16		16	29.0	Double PVC								

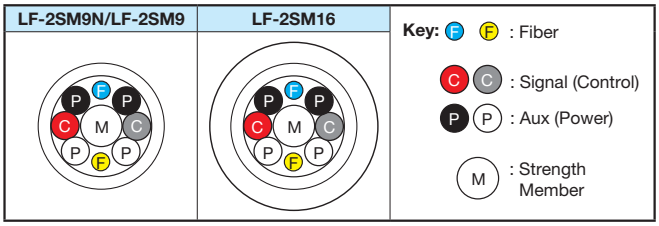
★ Production by order

LF-2SM9N: For general use.
- · Abrasion-resistance Jacket enhance the adaptability to all studio and outside broadcast applications.
- · Cost effective

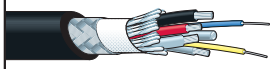
LF-2SM9: For fixed installation.
- · Smooth PVC Jacket brings stress-free cabling.

LF-2SM16: For studio use.
- · O.D. 16mm Double Jacket prevents the cable from being jammed under a camera pedestal dolly.

Cross Section



Slim Hybrid Fiber-optic Camera Cable

Type	Model	Sales Units (m)	Nom. O.D. (mm)	Weight kg/100m	Outer Jacket	Overall Shield	Tension Tolerance (N)	Strength Member O.D. (mm)	Min. Bend Radius	Temp. Range (deg C)	Channel Unit		
											Fiber	Aux. (Power)	Signal (Control)
 ★ Jacket color : black	LF-2SM7N NEW	Please contact us	7.1	7.3	Abrasion-resistance PVC	8/24/0.10TA 91%	300	1.4	6 x Nom. O.D.	-40 to +75	2 x SM 9/125 (low-water-peak) Unit O.D. 0.9 mm	2 x 20 AWG 21 / 0.18TA Unit O.D. 1.7 mm	2 x 25 AWG 7 / 0.18A Unit O.D. 1.2 mm

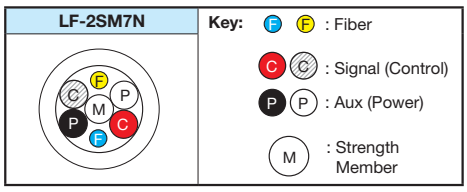
★ Production by order.

LF-2SM7N: O.D. 7 mm of slim profile and approx. 40% lighter than LF-2SM9N. Best fit for mobile applications. The power transmission distance is approx. twice as long as the previous model LF-2SM7R.

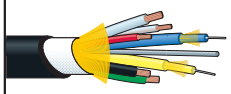
Note: The power transmission distance is shorter than typical HFO camera cables (approx. 50% of LF-2SM9N). Please contact us for more information.

*Multichannel cables, LF-2SM7N-3P and LF-2SM7N-5P, are also available.

Cross Section



Heavy-duty Hybrid Fiber-optic Camera Cable

Type	Model	Sales Units (m)	Nom. O.D. (mm)	Weight kg/100m	Outer Jacket	Overall Shield	Tension Tolerance (N)	Strength Member O.D. (mm)	Min. Bend Radius	Temp. Range (deg C)	Channel Unit		
											Fiber	Aux. (Power)	Signal (Control)
 ★ Jacket color : black	LF-2SM7T-SC NEW	NEGO	7.1	5.3	TPU	N/A	1000	0.63 mm + Kevlar	Equal to Nom. O.D.	-30 to +75	2 x SM 9/125 (low-water-peak) Kevlar + TPU Jacket Unit O.D. 1.7 mm	2 x 23 AWG 60 / 0.08A Unit O.D. 1.4 mm	2 x 26 AWG 30 / 0.08A Unit O.D. 1.1 mm

★ Production by order. Ordering lot is negotiable.

LF-2SM7T-SC: Flex, Slim, Lightweight, and moreover, heavy-duty.
Ideal for short-distance remote broadcast applications of up to 200 meters.

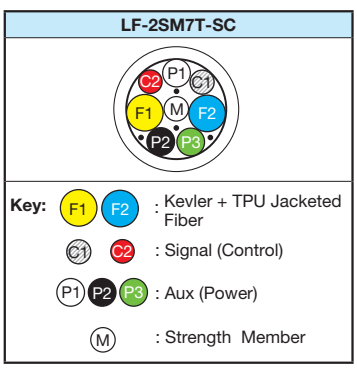
Slim and Lightweight
O.D. 7mm and weighing only 5.3 kg/100 m, it's so easy to carry around.

High Flexibility
Thermoplastic Polyurethane Jacket offers amazing flexibility.

Superior Mechanical Properties
Minimum bend radius: 7.1 mm.
Lateral pressure resistance, Shock resistance and Bending tolerance exceed that of MIL-SPEC Tactical Cable (TAC-4).

Note: The power transmission distance of LF-2SM7T-SC is shorter than typical HFO camera cables (approx. 30% of LF-2SM9N).
LF-2SM7T-SC requires a special technique during a connector assembly; cable assemblies are ready and recommended. Please contact us for more information.
LF-2SM7T-SC cannot be assembled with TAJIMI type connector including Canare OC series.

Cross Section



HFO Camera Cable Assemblies

Canare HFO connectors offer easy maintenance with detachable alignment sleeve and insulator.

- SMPTE 304M compliant
- Easy maintenance design
- Stainless steel body
- Color rings included.
- Return loss: 45 dB or greater (λ = 1.3 µm)
- Insertion loss: 0.5 dB or greater (λ = 1.3 µm)

■ SMPTE 311M Compliant NEW

Type		Model	Length (m)
 Jacket color : black	★	FCC10N	10
	★	FCC20N	20
	★	FCC25N	25
	★	FCC35N	35
	★	FCC50N	50
	★	FCC100N	100
	★	FCC150N	150
	★	FCC200N	200

★ Production by order

- Standard and widely-used models.
- Heat shrink tubes help in labeling on the cable.

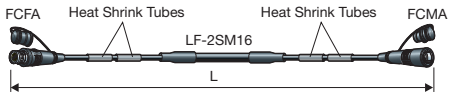
* TAJIMI compatible type (Canare OCC series) is also available. Please contact us for more information.

FCFA, FCF7A

FCMA, FCM7A

Color Rings

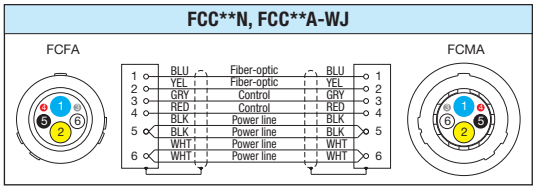
■ SMPTE 311M Compliant (Double Jacket)

Type		Model	Length (m)
 Jacket color : black	★	FCC50A-WJ	50
	★	FCC100A-WJ	100

★ Production by order

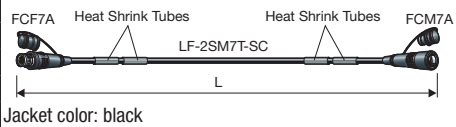
- O.D. 16mm double jacket prevents the cable from being jammed under a camera pedestal dolly.
- Heat shrink tubes help in labeling on the cable.

* TAJIMI compatible type (Canare OCC-WJ series) is also available. Please contact us for more information.



Wiring Diagram

■ Slim Type NEW

Type		Model	Length (m)
 Jacket color: black	★	FCC10-7N	10
	★	FCC20-7N	20
	★	FCC30-7N	30
	★	FCC50-7N	50
	★	FCC100-7N	100

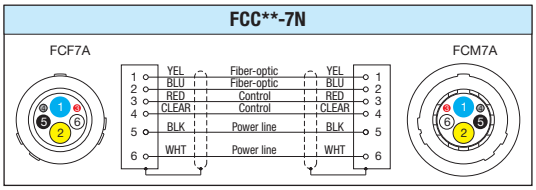
★ Production by order

- Equipped with slim and lightweight cable LF-2SM7N.
- Reduce the weight approx. 5 kg per 100m from typical HFO camera cable as FCC100N.
- Heat shrink tubes help in labeling on the cable.
- The power transmission distance is approx. twice as long as the previous model.

Note: The power transmission distance of FCC**-7N is approx. half of that of the FCC**N.

* TAJIMI compatible type (Canare OCC-7N series) is also available. Please contact us for more information.
* Multichannel fantails, F3-FCC-7N and F5-FCC-7N series, are also available.

FCC**-7N



Wiring Diagram

■ Heavy-duty Type NEW

Type		Model	Length (m)
 Jacket color : black	★	FCC**A-7T-SC	NEGO

★ Production by order. Length is negotiable.

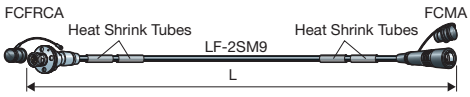
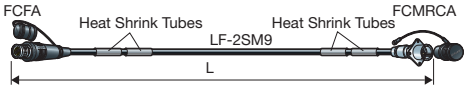
- Equipped with heavy-duty, flex and lightweight cable LF-2SM7T-SC. (see page 12)
- Best fit for mobile applications.
- Please contact us for more details.

Note: The power transmission distance of FCC**A-7T-SC is quite shorter than typical HFO camera cables.

*TAJIMI compatible type is not available.

FCC**A-7T-SC

Hybrid Fiber-optic Camera Cable Assemblies (Flanged Type)

Type		Model	Length (m)
 Jacket color : black IU-FCF-SET included	★	FCC05A-FRCM	5
	★	FCC10A-FRCM	10
 Jacket color : black IU-FCM-SET included	★	FCC05A-FMRC	5
	★	FCC10A-FMRC	10

★ Production by order.
* TAJIMI compatible type (OC series) is also available. Please contact Canare for more information.

- HFO camera cable with the flange for panel mounting.
- SMPTE 304M, 311M, and ARIB BTA S-1005B compliant.
- Return loss: 45dB or greater (λ =1.3μm) .
- Insertion loss: 0.5dB or less (λ =1.3μm) .
- Connector body material is stainless steel.
- 2 each of 7 color rings and insulation plates included.

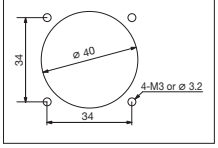

Color Rings


IU-FC*-SET

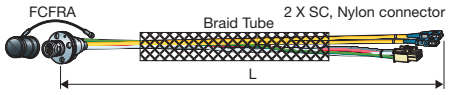
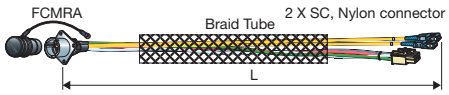

FCFRCA


FCMRCA

■ Hole Dimensions
(with IU-FC*-SET)



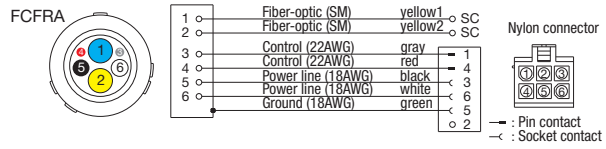
Hybrid Fiber-optic Receptacle Cables

Type		Model	Length (m)
 Jacket color : black IU-FCF-SET included		FCS015A-FR	1.5
 Jacket color : black IU-FCM-SET included		FCS015A-MR	1.5

* TAJIMI compatible type (OC series) is also available. Please contact Canare for more information.

- Ideal for connecting wall terminal panels to splice enclosures, etc.
- Return loss: 45dB or greater (λ =1.3μm) .
- Insertion loss: 0.5dB or less (λ =1.3μm) .
- Connector body material is stainless steel.
- Insulation plates included.

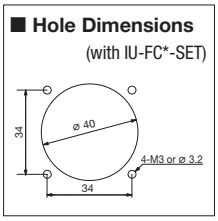
■ Wiring Diagram




FCFRA


FCMRA

■ Hole Dimensions
(with IU-FC*-SET)



Insulation Plate

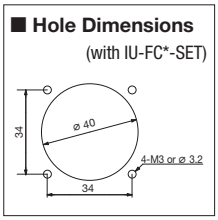
Ideal for perfect insulation between individual connector and panel.

Model	Description
IU-FCM-SET	FCMRA, FCMRCA
IU-FCF-SET	FCFRA, FCFRCA

- Material: Bakelite (phenolic resin)
- Mounting screws included.


IU-FC*-SET

■ Hole Dimensions
(with IU-FC*-SET)



Extraction Tool

Extraction tool helps easy to clean Canare HFO connectors.

Model	Description
ASPT-1	FCFA, FCF7A, FCFRA, FCFRCA

- Tool to be used to release the alignment sleeve unit when cleaning HFO connectors.

* Use the CLETOP 2.5/2.0 (100) cleaning stick to clean fiber-optic camera connectors.


ASPT-1


Quick-release

US Patent No.7241055B2
JP Patent No.4340186

Hybrid Fiber-Optic Camera Cable Checker

Canare Cable Checker allows fast, easy confirmation of HFO cables in the field. No heavy equipment to drag around. The compact design features a backlight digital display to measure optic loss/power and electrical continuity. Small and light, Canare cable checker helps make mobile installations smooth, secure and constant.

Kit Model	Individual Model	
	Measuring Unit	Loop-back Unit
FCT-FCKIT	FCT-FC	FCT-FCLB

* TAJIMI compatible type (OC series) is also available. Please contact Canare for more information.

Key Features and Benefits

- Compact, hand-held design
- Measured optical loss and power in addition to electrical signals
- 2x AA, 20 hours battery life
- The kit includes a storage case, carrying cases, AA Batteries, and cleaning sticks

Specifications

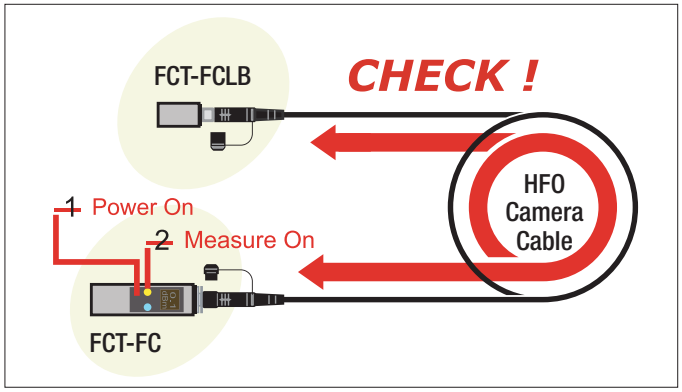
Kit Model	FCT-FCKIT
Connector	SMPTE/ARIB (Canare FC Series)
LD	FP-LD
Wavelength	1310nm
Output Power	-2.5dBm
Sensitivity	-24 to -2dBm
Maximum Length	3.5km (Canare LF-2SM9N)
Optic Lines	Two Lines: Power and Loss
Copper Lines	Power, Control, and Shield: Connectibility
Battery/Life	2pcs of AA/ Approx. 20hours
Operating Temperature	-10 to 60°C
Dimensions	FCT-FC: 46x 46x 150mm FCT-FCLB: 46x 46x 65mm
Weight	FCT-FC: 380g FCT-FCLB: 170g
Accessories	Storage case, carrying cases, AA Batteries, and cleaning sticks

CE, FCC, FDA registered

US Patent No.7113678
JP Patent No.4155979

Carrying Cases

Storage Case

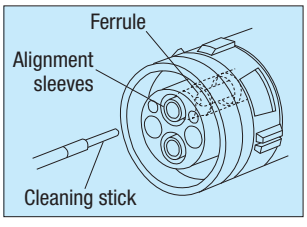


Technical Note

Maintaining Hybrid Fiber-Optic Camera Connectors

The connector sections to be cleaned are the key parts, including the tips and sides of ferrules, the interior walls of alignment sleeves and the interior and exterior of connector shells. Note that scratches and particles of foreign matter on the tip of the ferrule can have a disabling effect on fiber-optic transmission. The following procedures should be used when cleaning hybrid fiber-optic camera connectors.

- For Plugs, the interior surfaces of alignment sleeves and the tips of ferrules are to be cleaned with the non-alcohol treated cleaning stick using a gentle stroking action. Canare FCFA and FCFRA enhance easy cleaning procedure for its innovative alignment sleeve and insulator detachable design.
  US Patent: No.7241055B2, JP Patent: No.4340186



- For Jacks, it is important to clean both the tips and sides of the completely protruding ferrules with the cleaning stick.
- Both the male and female connector shells tend to attract dust and metal particles, so it is important to clean both the insides and outsides using cotton gauze or similar material.

Before cleaning

After cleaning

Cleaning Stick
Model: CLETOP 2.5/2.0
· Compact and disposable
· Allows cleaning both the tips and sides of ferrules
· Manufactured by NTT-AT

IBC Brand Cleaner M-20
Model: 14347
· Easy "one-click" cleaner
· Allows cleaning the tips of ferrules without removing alignment sleeve
· Manufactured by US Conec

Hybrid Fiber-optic Camera Connector Panels

Pre-terminated HFO camera connector panel with built-in splice enclosure box provides easy and quick installation between HD camera system and terminal panel or rack. By combining the unit and frame, HFO camera connector panel enables a variety of layouts depending on the system design.

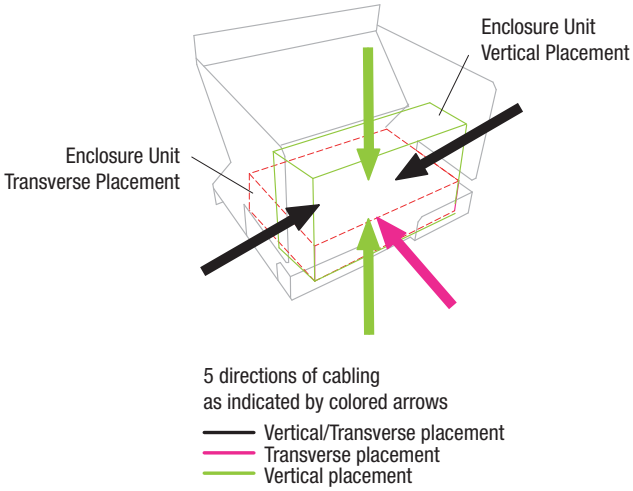
■ COPS-F Series (SMPTE)

	Model	Panel Size	HFO Connectors* (Assembly)
★	COPS-FF3	Wall Mount Type 3RU Height, W:197.6mm	2x FCFRA (FCS003A-FR)
★	COPS-FM3		2x FCMRA (FCS003A-MR)
★	COPS-FF2	Wall Mount Type 2RU Height, W:197.6mm	2x FCFRA (FCS003A-FR)
★	COPS-FM2		2x FCMRA (FCS003A-MR)
★	COPS3-FF3	Rack Mount Type 3RU	6x FCFRA (FCS003A-FR)
★	COPS3-FM3		6x FCMRA (FCS003A-MR)
★	COPS3-FF2	Rack Mount Type 2RU	6x FCFRA (FCS003A-FR)
★	COPS3-FM2		6x FCMRA (FCS003A-MR)

*Each HFO connector is pre-terminated. (length: 0.3m)
* TAJIMI compatible type (OC series) is also available. Please contact Canare for more information.
★ Production by order

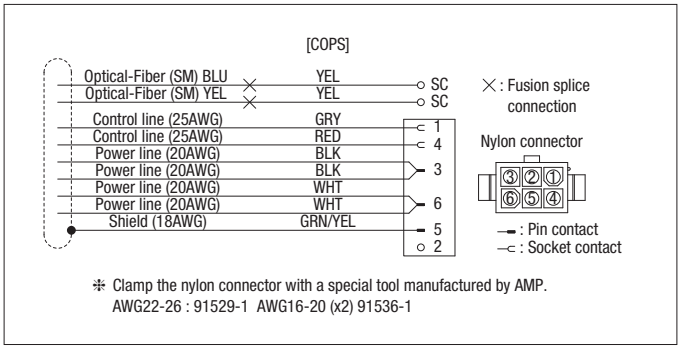
Key Features and Benefits

- Exclusive “5-directional Wiring”
- Convenient to build I/O interface between HD facilities and HD OB vans
- Variety of choice of 2RU/3RU and wall/rack mount
- Pre-terminated HFO connectors reduce installation time dramatically.
- Cost effective

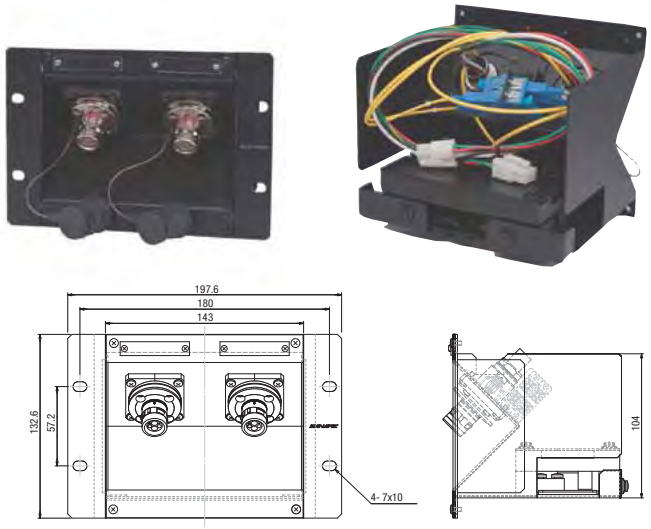


5-directional Wiring
JP Patent No.4388540

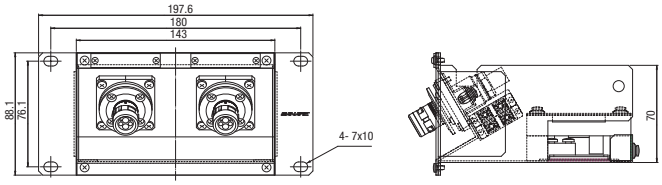
■ Wiring Diagram



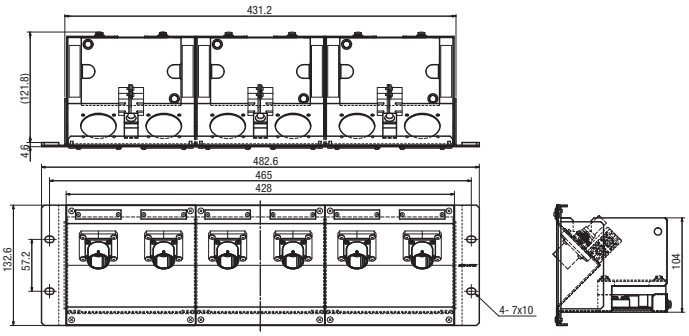
❉ Clamp the nylon connector with a special tool manufactured by AMP.
AWG22-26 : 91529-1 AWG16-20 (x2) 91536-1



COPS-FF3



COPS-FF2



COPS3-FM3

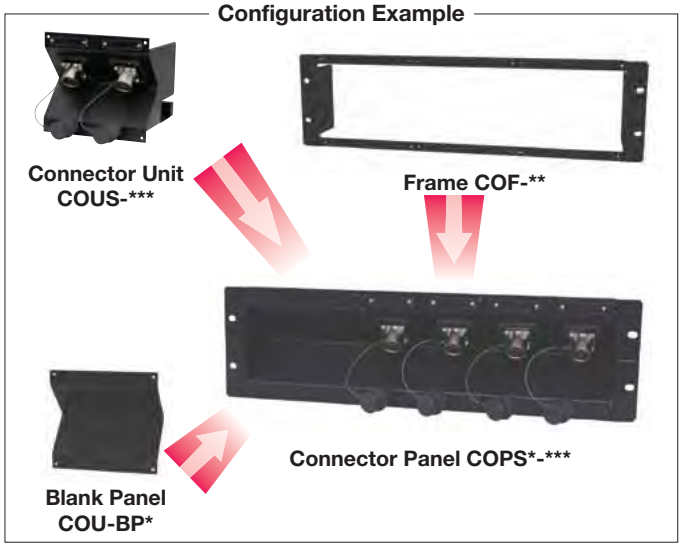
Accessories:
Fiber-optic cable w/SC connector (2m), grounding cable, nylon connector, pin contact, socket contact, tie-band, fusion splice protection sleeve, splice holder, color-coded tube, mounting screw, laser warning label.
[NOTE] A separately available dedicated tool is required to assemble nylon connectors.

■ Individual Units and Parts

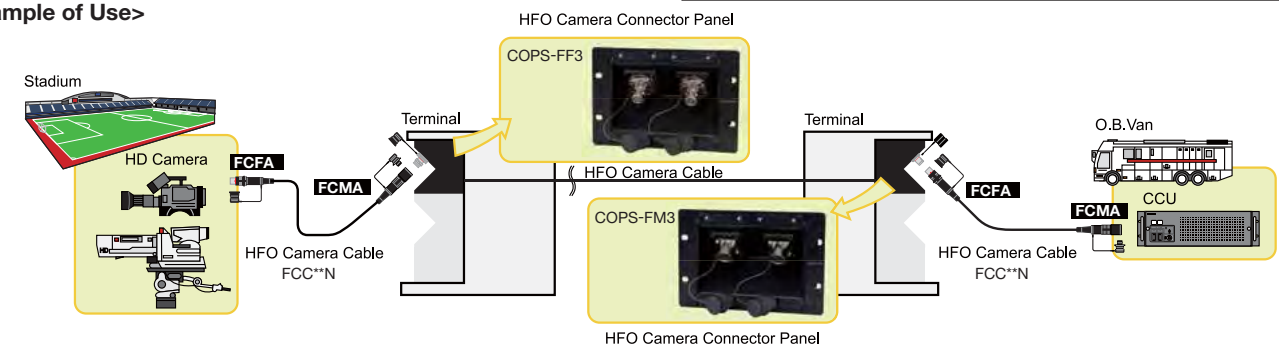
	Model	Panel Height	Description
★	COUS-FF3	3RU	Connector Unit w/ 2x FCFRA (FCS003A-FR)
★	COUS-FM3	3RU	Connector Unit w/ 2x FCMRA (FCS003A-MR)
★	COUS-FF2	2RU	Connector Unit w/ 2x FCFRA (FCS003A-FR)
★	COUS-FM2	2RU	Connector Unit w/ 2x FCMRA (FCS003A-MR)
	COU-BP3	3RU	Blank Panel
★	COU-BP2	2RU	Blank Panel
★	COF-13	3RU	Frame for 1 Unit
★	COF-12	2RU	Frame for 1 Unit
	COF-33	3RU	Frame for 3 Unit
★	COF-32	2RU	Frame for 3 Unit

*Each HFO connector is pre-terminated. (length: 0.3m)
* TAJIMI compatible type (OC series) is also available. Please contact Canare for more information.
★ Production by order

Configuration Example



<Example of Use>



Hybrid Fiber-optic Splice Enclosures

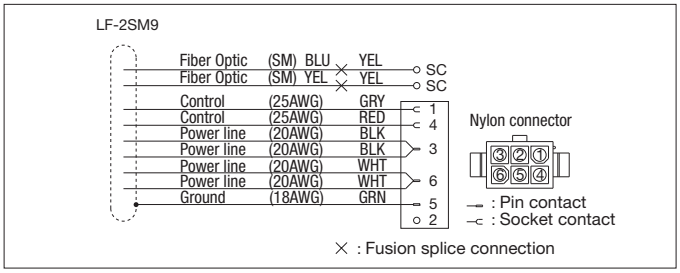
The fiber-optic splice enclosure was designed specifically for use with hybrid fiber-optic camera cables. The enclosure is used to protect fusion splice connection parts after installation.

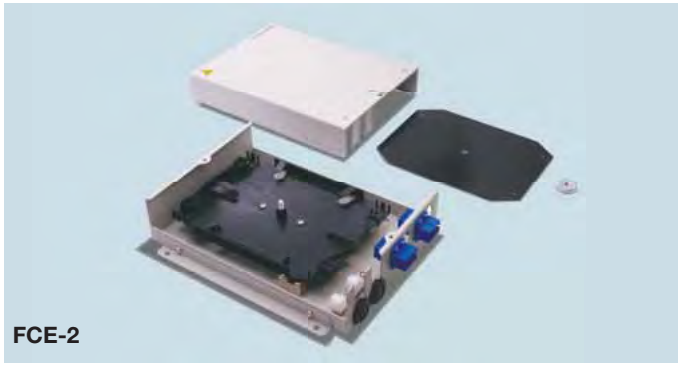
Model	No. of cables	Fusion splice tray No.	Adapter	
			SC	Nylon connector
FCE-2	2	1	4	2
FCE-4	4	2	8	4
FCE-6	6	3	12	6

- The enclosure is designed specifically for the hybrid fiber-optic camera cable (LF-2SM9), making installation and operation very easy.
- The enclosure can be installed on walls or placed flat. Mounting bracket (connector protection cover) can be detached from the box when installing in limited space.
- The enclosure is designed with two configurations, the top-bottom split design (FCE-2, FCE-4) and the removable panel design (FCE-6). Both designs enable easy installation of cables.
- The connection with hybrid fiber-optic receptacle cable is done by use of connectors, thus enabling easy interchanging of lines after installation.
- The tension member is insulated from the chassis.

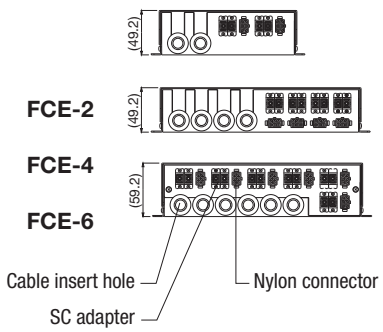
Note :
The following special tools are required for installing the nylon connectors.
Models: AMP91529-1 (26 to 22 AWG) and AMP91536-1 (20 to 16 AWG)

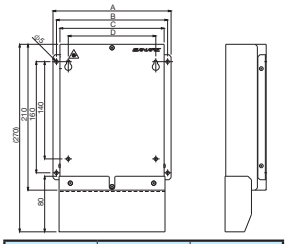
■ Wiring Diagram (Canare standard)





Accessories:
Fiber-optic cable w/SC connector (2m), splice holder, fusion splice protection sleeve, nylon connector, pin contact, socket contact, tie band, grounding cable, color-coded tube.

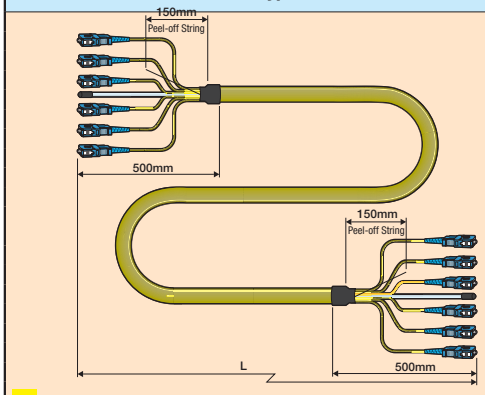




Type	FCE-2	FCE-4 FCE-6
A	170	240
B	160	230
C	150	220
D	126	196

(mm)

Fiber-optic Assemblies (Multichannel Fantails)

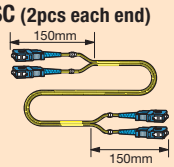
Type	Channel	Model	Length (m)	Fiber Optic Cable Brief Spec.		
				Part Number	Unit O.D. (mm)	Nom. O.D. (mm)
	2	★ 2FS10-S	10	LF-SM2-2C	2	7.4
		★ 2FS20-S	20			
		★ 2FS50-S	50			
	4	★ 4FS10-S	10	LF-SM2-4C		
		★ 4FS20-S	20			
		★ 4FS50-S	50			
	6	★ 6FS10-S	10	LF-SM2-6C		9.0
		★ 6FS20-S	20			
		★ 6FS50-S	50			
	8	★ 8FS10-S	10	LF-SM2-8C		10.0
		★ 8FS20-S	20			
		★ 8FS50-S	50			
	12	★ 12FS10-S	10	LF-SM2-12C		12.8
		★ 12FS20-S	20			
		★ 12FS50-S	50			
	16	★ 16FS10-S	10	LF-SM2-16C		14.7
		★ 16FS20-S	20			
		★ 16FS50-S	50			
	24	★ 24FS10-S	10	LF-SM2-24C		15.3
		★ 24FS20-S	20			
		★ 24FS50-S	50			

★ Production by order

- Flexible cable with reliable bellcore boots
- Adjustable fantail length with peel-off string
- UPC polishing; Return loss ≥50dB for single mode
- Transmission loss 0.5dB at λ=1.31μm and 0.4dB at λ=1.55μm

Fiber-optic Assemblies (Single/Dual Channel)

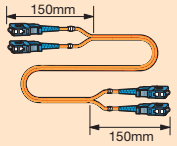
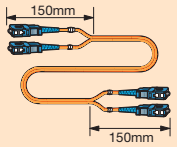
Single mode

Type	Model	Length (m)
SC - SC  YEL	FS3C002-S	0.2
	FS3C003-S	0.3
	FS3C005-S	0.5
	FS3C01-S	1.0
	FS3C015-S	1.5
	FS3C02-S	2.0
	FS3C03-S	3.0
	FS3C05-S	5.0
	★ FS3C10-S	10.0
	★ FS3C15-S	15.0
	★ FS3C20-S	20.0
	★ FS3C30-S	30.0
SC - SC (2pcs each end) 	★ 2FSZ3S02-S	2.0
	★ 2FSZ3S03-S	3.0
	★ 2FSZ3S05-S	5.0

★ Production by order

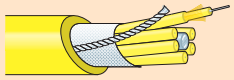
- Flexible cable with reliable bellcore boots
- UPC polishing; Return loss ≥50dB for single mode and ≥25dB for multi mode
- Transmission loss 0.5dB at λ=1.31μm and 0.4dB at λ=1.55μm for single mode
- Transmission loss 3.0dB at λ=0.85μm and 1.0dB at λ=1.30μm for multi mode

Multi mode

Type	Model	Length (m)
SC - SC GI50/125  ORL	★ FG53C02-S	2.0
	★ FG53C03-S	3.0
	★ FG53C05-S	5.0
SC - SC (2pcs each end) GI50/125 	★ 2FG5Z3S02-S	2.0
	★ 2FG5Z3S03-S	3.0
	★ 2FG5Z3S05-S	5.0
SC - SC GI62.5/125  ORL	★ FG63C02-S	2.0
	★ FG63C03-S	3.0
	★ FG63C05-S	5.0
SC - SC (2pcs each end) GI62.5/125 	★ 2FG6Z3S02-S	2.0
	★ 2FG6Z3S03-S	3.0
	★ 2FG6Z3S05-S	5.0

★ Production by order

Single-mode Fiber-optic Cable (Multichannel)

Type	Model	Sales Units (m)	Nom. O.D. (mm)	Weight kg/100m	Outer Jacket	Tension Tolerance (N)	Min. Bend Radius	Temp. Range (deg C)	Fiber-optic Unit		
									Fiber	Attenuation	Unit O.D. (mm)
 LF-SM2-6C Jacket color: yellow	★ LF-SM2-2C	Please contact us	7.4	5.4	PVC	290	10 x Nom. O.D.	-40 to +75	SM 9/125 Kevlar + PVC Jacket	0.5 dB/km @1310nm	2.0
	★ LF-SM2-4C		7.4	5.5		290					
	★ LF-SM2-6C		9.0	7.3		300					
	★ LF-SM2-8C		10.0	10.4		780					
	★ LF-SM2-12C		12.8	14.2		780					
	★ LF-SM2-16C		14.7	16.3		780					
	★ LF-SM2-24C		15.0	18.3		780					

★ Production by order

- Smooth PVC Jacket
- Including a strength member and a rip cord.

3G Transmission Design

■ What is 3G-SDI?

3G-SDI is a new transmission format (1080p) that offers twice the data carrying capacity (bandwidth) of today's widely used HD-SDI (1080i). SMPTE ST424 covering this format includes regulations for the coaxial connectors and cables used for transmission, and Canare's 75Ω products already meet the performance requirements for these.

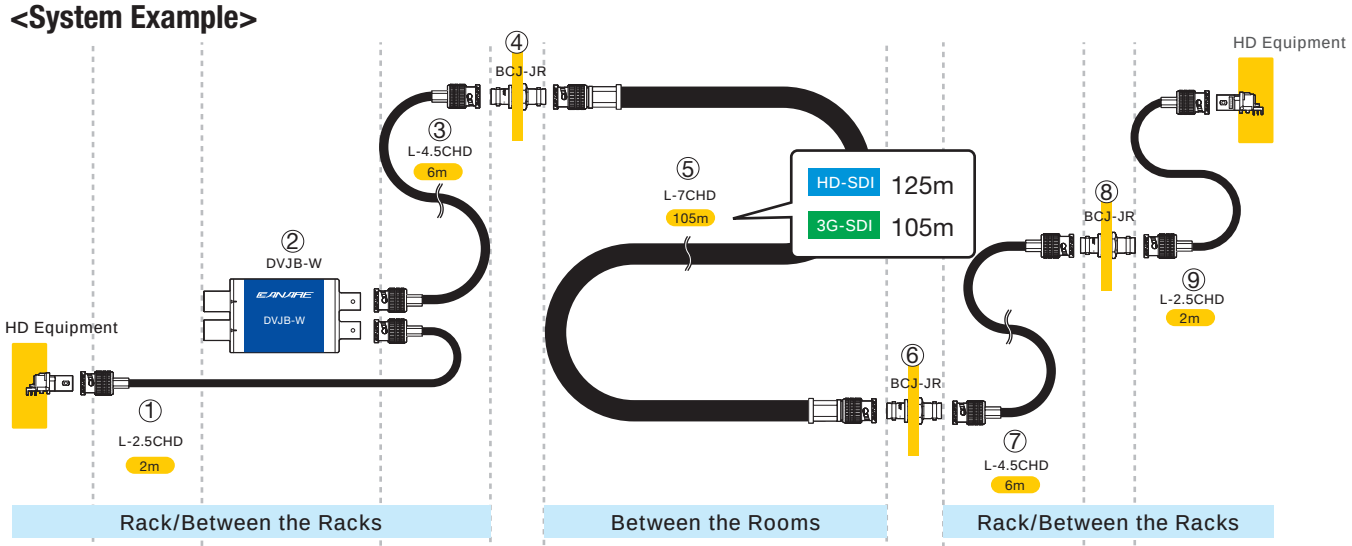
■ Signal Attenuation in 3G Transmission Lines

In order to keep overall transmission line attenuation below the 30dB loss budget, it is necessary to calculate attenuation amounts individually for each section in the system. In the system shown below, the losses occurring within each transmission line have been calculated and entered into a level diagram. From this it is possible to see the differences in transmission distances possible with HD-SDI and 3G-SDI when using a coaxial cable (L-7CHD). If this shows that attenuation will surpass the specified loss budget, then it will be necessary to change to cables with less attenuation, or to revise the circuit and/or equipment layout to compensate. It is also recommended that these calculations include a 2–3dB design margin.

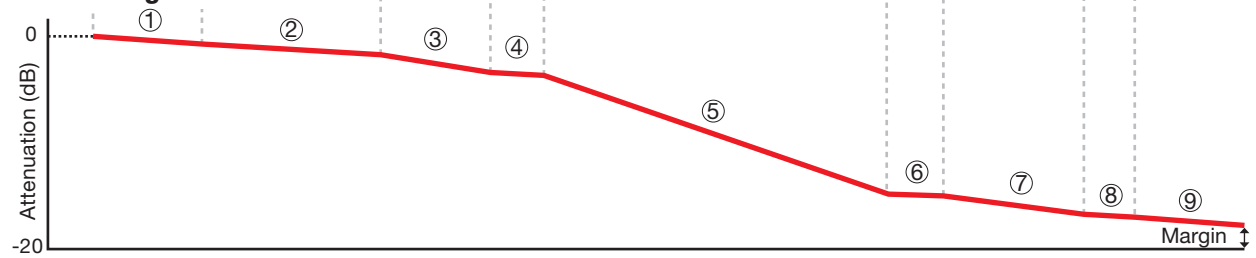
■ SMPTE Performance Requirements

Format	HD-SDI SMPTE 292M	3G-SDI SMPTE ST424
Transmission Bit Rate	1.485Gbps	2.97Gbps
Characteristic Impedance (Zo)	75Ω	
Transmission Line Attenuation	20dB @742.5MHz	30dB @1.485GHz
Transmission Line Return Loss	15dB or greater @5M~1.485GHz	15dB or greater @5M~1.485GHz 10dB or greater @1.485~2.97GHz

<System Example>



<Level Diagram>



■ System Attenuation

Format	Connector/ Cable	① L-2.5CHD	② DVJB-W	③ L-4.5CHD	④ BCJ-JR	⑤ L-7CHD	⑥ BCJ-JR	⑦ L-4.5CHD	⑧ BCJ-JR	⑨ L-2.5CHD	Sub Total	Margin	Total Amount
HD-SDI	m or pcs	2	1	6	1	**125**	1	6	1	2	17.6dB	2.4dB	20.0dB
	Loss (dB/m)	0.3	0.9	0.2	0.2	0.1	0.2	0.2	0.2	0.3			
	Loss (total) (dB)	0.6	0.9	1.2	0.2	12.5	0.2	1.2	0.2	0.6			
3G-SDI	m or pcs	2	1	6	1	**105**	1	6	1	2	27.7dB	2.3dB	30.0dB
	Loss (dB/m)	0.4	0.9	0.3	0.2	0.2	0.2	0.3	0.2	0.4			
	Loss (total) (dB)	0.8	0.9	1.8	0.2	21.0	0.2	1.8	0.2	0.8			

75Ω Active BNC Receptacles

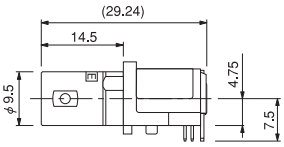
**Small BNC connector incorporates either a cable equalizer or a cable driver.
Active BNC makes innovation in your 3G-SDI PC board layout.**

Model	Description	Built-in IC
BCA-TL	TX, Right Angle	Cable Driver
BCA-RL	RX, Right Angle	Cable Equalizer
BCA-TS	TX, Straight	Cable Driver
BCA-RS	RX, Straight	Cable Equalizer

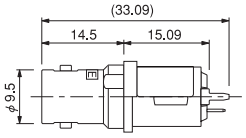
• Standard package (5pcs)

BCA-TL

BCA-RS

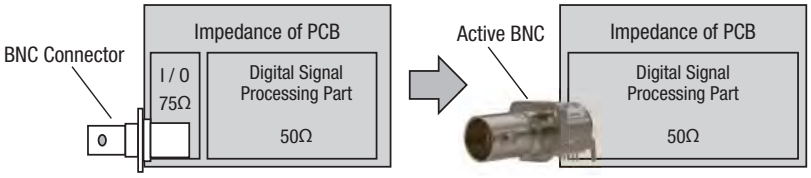


(Right Angle)

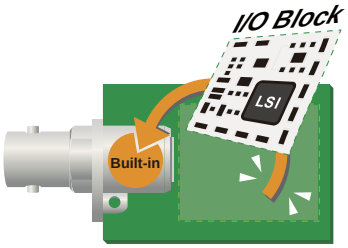


(Straight)

- BNC connector integrated with a cable equalizer or a cable driver, and yet keep the connector size to a minimum.
- Supports 3G-SDI, HD-SDI, SD-SDI and DVB-ASI
- Offers an excellent return loss performance without designing 75 ohm I/O block
- Simplifies PCB design process dramaticaly and will reduce entire development cost
- PCB space saving and help to downsize devices
- Easy to distinguish TX from RX by color-coded insulation



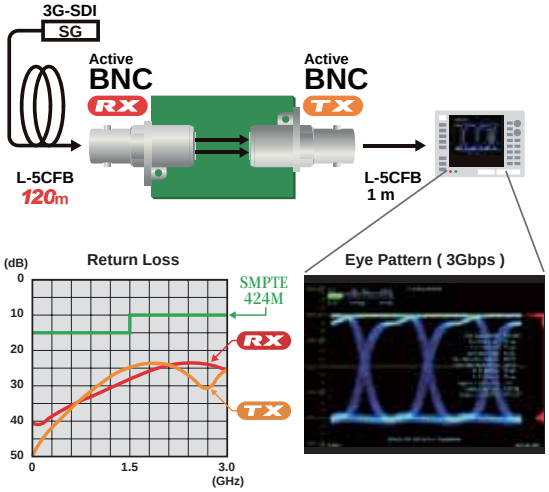
Simplify Your Circuit Design

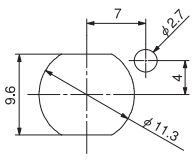
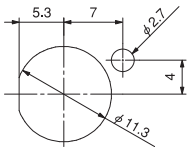
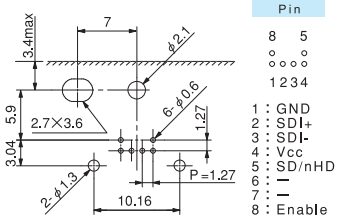
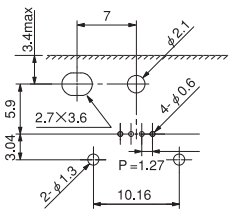
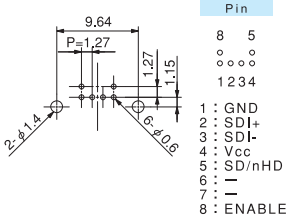
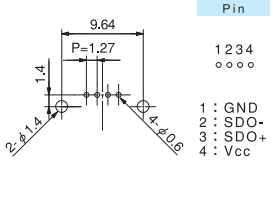


Space-saving

Specifications

Model	TX BCA-TL, BCA-TS	RX BCA-RL, BCA-RS
Supply Voltage	DC 3.3V	
Corrent Consumption	50mA	70mA
Operating Temperature	-25°C to +85°C	
Output Signal Amplitude	800mVpp	—
Equalizing Cable Length	—	3G-SDI 120m w/L-5CFB
Compliant	SMPTE424M, 292M, 259M, BTA S-004C, EN50083-9, RoHS	
Weight	Approx. 9.0g	



	BCA-TL	BCA-RL	BCA-TS	BCA-RS
Panel Hole Dim.	 t1.6 Screw: M2.6		 t1.6 Screw: M2.6	
PCB Hole Dim.	 Pin 8 5 / 1 2 3 4 1 : GND 2 : SDI+ 3 : SDI- 4 : Vcc 5 : SD/nHD 6 : — 7 : — 8 : Enable t2.0 (TOP VIEW)	 Pin 1 2 3 4 1 : GND 2 : SDO- 3 : SDO+ 4 : Vcc t2.0 (TOP VIEW)	 Pin 8 5 / 1 2 3 4 1 : GND 2 : SDI+ 3 : SDI- 4 : Vcc 5 : SD/nHD 6 : — 7 : — 8 : ENABLE t2.0 (TOP VIEW)	 Pin 1 2 3 4 1 : GND 2 : SDO- 3 : SDO+ 4 : Vcc t2.0 (TOP VIEW)

75Ω DIN1.0/2.3 Connectors

Mini coax connectors IEC61169-29 and DIN 47 297 compatible.

■ DCP-C Series (Crimp Plugs)

VSWR 1.2@ 3GHz

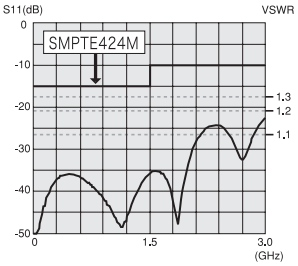
Model	Suitable Cable		Die Set
	Canare	Others	
DCP-C25HD	L-2.5CHD	1855A, VDM230	TCD-D253F
DCP-C3F	L-3CFB	—	TCD-D253F
DCP-C4F	L-4CHD, L-4CFB	1505A, VPM2000	TCD-D534F
DCP-C53	L-4.5CHD	1694A, VSD2001	TCD-D534F

•Standard package (20pcs/100pcs)

DCP-C25HD

- Our unique ball-locking mechanism offers smooth and reliable mating.
- Canare crimp design ensures quick and reliable installation.
- Elongated body design enables stable finger grip.
- Return loss: 20 dB or greater up to 3GHz
- Extraction tool : BET-DIN (see page 34)

Be sure to use Canare crimping tool for installing connectors on cables



Rerun Loss for DCP-C25HD

■ PCB Mount Receptacles

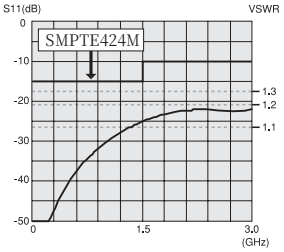
VSWR 1.2 @ 3GHz

Model	Description	Nut Driver Bit
DCJ-LR	Right Angle	NDT-DIN
DCJ-LR/1	Right Angle, Long type	
DCJ-FEM	Edge Mount	

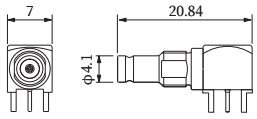
• Standard package (20 pcs)

- Compact design ideal for high density mounting and downsizing devices.
- Combination of DCJ-LR/1 and DCJ-FEM will be effective for staggered arrangement.
- Return loss: 20 dB or greater up to 3 GHz.

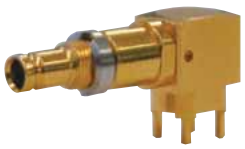
Note: Nut driver bit NDT-DIN is required.

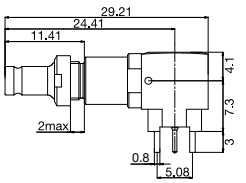


Rerun Loss for DCJ-LR

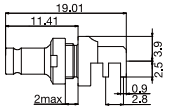


DCJ-LR

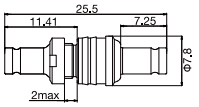




DCJ-LR/1



DCJ-FEM



DCJ-JR

■ Adapters

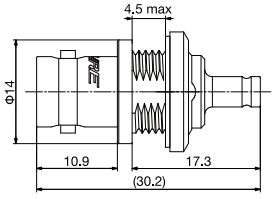
VSWR 1.1 @ 3GHz

Model	Description	Panel Mount	Nut Driver Bit
DCJ-JR	Jack to Jack	Yes	NDT-DIN
BCJ-DCJ	BNC Jack to DIN1.0/2.3 Jack	Yes	N/A
BCP-DCJ	BNC Plug to DIN Jack	No	N/A

•Standard package (20 pcs)

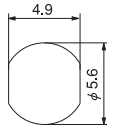
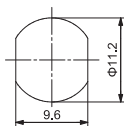
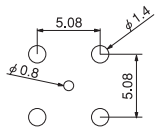
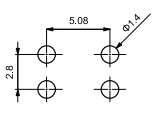
- Return loss: 26 dB or greater up to 3 GHz.

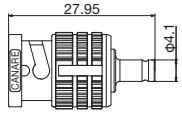
Note: Nut driver bit NDT-DIN is required for DCJ-JR



BCJ-DCJ

<Panel Hole Dim.> <PCB Hole Dim.>

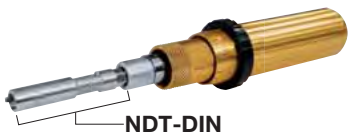
DCJ-LR DCJ-LR/1 DCJ-FEM DCJ-JR	BCJ-DCJ	DCJ-LR DCJ-LR/1	DCJ-FEM
			
t2.0		t2.0	t1.6



BCP-DCJ

■ Nut Driver Bit

Model	Description
NDT-DIN	6.35mm (1/4") hex shank



NDT-DIN

75Ω BNC Crimp Plugs

Canare True 75 Ω BNC Connectors has been widely used in the world with quick and reliable crimp design, and outstanding performance. The high-end model BCP-B series are specially designed for particular coax cables, and minimize return loss at 3 GHz.

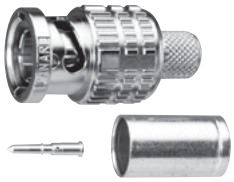
■ BCP-B Series

VSWR 1.1@ 3GHz

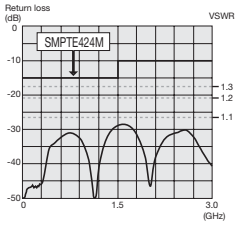
Model	Suitable Cable		Center Pin	Sleeve	Boot	Die Set
	Canare	Others				
BCP-B25HD	L-2.5CHD, L-2.5CHLT	VDM230	B11015E	★ BN7129	CB02	TCD-35CA
BCP-B26	—	1855A	B11014E	★ BN7029C	CB02	TCD-35CA
BCP-B28 NEW	—	1855ENH, HD PRO 0.6/2.8 AF	B11015E	★ BN7052A	CB02	TCD-35CA
BCP-B3F	L-3CFB, V*-3CFB	—	B11015E	BN7003A	CB03	TCD-35CA
BCP-B31F	L-3CFW, V5-3CFW	—	B11015E	BN7015A	CB04	TCD-4CA, TCD-451CA
BCP-B4F	L-4CHD, L-4CFB, V*-4CFB	1505A, 1505ANH, VPM2000, HD PRO 0.8/3.7 AF	B11016E	BN7015A	CB04	TCD-4CA, TCD-451CA
BCP-B45HW	L-4.5CHWS	1694F	B11020D	BN7016	CB05A	TCD-35CA
BCP-B53	L-4.5CHD	1694A	B11020D	BN7046	CB05A	TCD-35CA
BCP-B56 NEW	—	HD PRO 1.0/4.8 AF	B11020D	BN7046	CB05A	TCD-35CA
BCP-B5F	L-5CFB, V*-5CFB	—	B11020D	B75004A	CB05A	TCD-5CF, TCD-55FA
BCP-B51F	L-5CFW, V5-5CFW	—	B11020D	B75004A	CB05A	TCD-5CF, TCD-55FA

• Standard package (20pcs/100pcs)

★Production by order. Please contact us for ordering lot.



BCP-B5F



Return loss for BCP-B53

■ BCP-A Series

VSWR 1.1 @ 2GHz, VSWR 1.2 @ 3GHz(*1)

Model	Suitable Cable		Center Pin	Sleeve	Boot	Die Set
	Canare	Others				
BCP-A25	L-2.5C2V	—	★ BN1018A	★ BN7029C	CB02	TCD-35CA
BCP-A25F	L-2.5CFB	1855A, 8218, 1417B, 1418B	B11014E	★ BN7029C	CB02	TCD-35CA
BCP-A3	L-3C2VS, L-3C2V, V*-3C	—	B11014E	BN7003A	CB03	TCD-35CA
BCP-A31	L-3C2W	—	B11014E	★ BN7011	CB04	TCD-31C
BCP-A32	—	1506A, 1824A, 1825A, 1826A, 643948	B11016E	★ BN7026A	CB03	TCD-35CA
BCP-A3F	L-3CFB, V*-3CFB	—	B11015E	BN7003A	CB03	TCD-35CA
BCP-A4	LV-61S	8241, 8279, RG-59B/U	B11015E	BN7015A	CB04	TCD-4CA, TCD-451CA
BCP-A42	—	1505F	B11016E	★ BN7011	CB04	TCD-31C
BCP-A4F	L-4CHD, L-4CFB, V*-4CFB	1505A, 1505ANH, 8212, 8241F, 9167, 9259, 9659, VPM2000, HD PRO 0.8/3.7 AF	B11016E	BN7015A	CB04	TCD-4CA, TCD-451CA
BCP-A5	L-5C2VS, L-5C2V, V*-5C	—	B11016E	BN7016	CB05A	TCD-35CA
BCP-A52	L-5C2W	—	B11016E	★ BN7014	—	TCD-451CA
BCP-A55	—	1695A, VSD2001TS	B11020D	★ BN7045A	CB04	TCD-35CA
BCP-A5F	L-5CFB, V*-5CFB	—	B11020D	B75004A	CB05A	TCD-35CA
BCP-A77	LV-77S	8281F	B11016E	B75004A	CB05A	TCD-5CF-TCD-55FA
BCP-VA3	V*-3C	—	B11014E	★ BN7052A	CB02	TCD-35CA
BCP-VA5	V*-5C	—	B11016E	★ BN7045A	CB05A	TCD-35CA

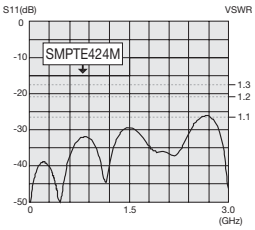
• Standard package (20pcs/100pcs).

★ Production by order. Please contact us for ordering lot.

Note: Suitable die set for BCP-A5F is TCD-35CA; do not use TCD-5CF/TCD-55FA for BCP-A5F.

*1: Excluding BCP-A25, BCP-A25F, BCP-A4

BCP-A3



Return loss for BCP-A3

■ BCP-C Series

VSWR 1.1 @ 2GHz (*2)

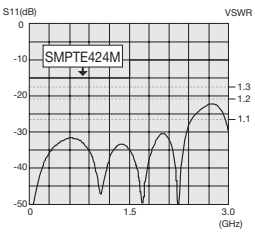
Model	Suitable Cable		Center Pin	Sleeve	Boot	Die Set
	Canare	Others				
BCP-C1	L-1.5C2VS, V*-1.5C	83264, 83267	Solder	★ BN7022	CB01	TCD-1DB
★ **BCP-C5HD**	L-5CHD	—	★ BN1139	B75004A	CB05A	TCD-5HD
BCP-C6HD	L-6CHD	—	★ BN1083A	★ BN7074A	—	TCD-67HD
BCP-C71A	—	7731A, 9064, 9292, 1617A, 9011	★ BN1043A	★ BN7021A	—	TCD-7CA
BCP-C7FA	L-7CFB	—	★ BN1012B	★ BN7021A	—	TCD-7CA
BCP-C7HD	L-7CHD	—	★ BN1082A	★ BN7021A	—	TCD-67HD

• Standard package (20pcs/100pcs).

★ Production by order. Please contac us for ordering lot.

*2: Excluding BCP-C1

BCP-C6HD



Return loss for BCP-C6HD

- Canare crimp design ensures quick and reliable installation.
- Gold plated "snap locks" center pin and beryllium copper outer contact.
- Elongated body design enables stable finger grip (excluding BCP-C1).
- Position mark on the BCP-B/A series body makes it easier to check if the connector is locked.

Note: Die set for BCP-A5F is TCD-35CA

Be sure to use the Canare crimping tool for installing connectors on cables.

75 Ω BNC Crimp Plugs (Right Angle Type)

■ BCP-LC Series

VSWR 1.1@ 2GHz

Model	Suitable Cable		Center Pin	Sleeve	Boot	Die Set
	Canare	Others				
BCP-LC3	L-3C2VS, L-3C2V,V*-3C	—	B11014E	BN7003A	—	TCD-35CA
BCP-LC3F	L-3CFB, V*-3CFB	—	B11015E	BN7003A	—	TCD-35CA
BCP-LC5	L-5C2VS, L-5C2V, V*-5C	—	B11016E	BN7016	—	TCD-35CA
BCP-LC5F	L-5CFB, V*-5CFB	—	B11020D	B75004A	—	TCD-5CF, TCD-55FA

• Standard package (20pcs)

★: Production by order. Please contact us for ordering lot.

BCP-LC3

- Canare crimp design ensures quick and reliable installation.
- Gold plated "snap locks" center pin and beryllium copper outer contact.

Be sure to use the Canare crimping tool for installing connectors on cables.

75 Ω Slim BNC Crimp Plugs

■ MBCP-C Series

VSWR 1.1@ 1.5GHz

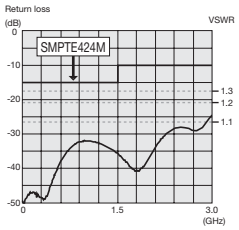
Model	Suitable Cable		Center Pin	Sleeve	Boot	Die Set
	Canare	Others				
MBCP-C25F	L-2.5CFB	1855A, 8218, 1417B, 1418B	B11014E	★ BN7029C	—	TCD-35CA
MBCP-C3F	L-3CFB, V*-3CFB	—	B11015E	BN7003A	CB24	TCD-35CA
MBCP-C4	LV-61S	8241, 8279, RG-59B/U	B11015E	BN7015A	CB25	TCD-4CA, TCD-451CA
MBCP-C4F	L-4CFB, V*-4CFB	1505A, 1505ANH, 8212, 8241F, 9167, 9259	B11016E	BN7015A	CB25	TCD-4CA, TCD-451CA
★ **MBCP-C53**	L-4.5CHD	1694A, 9066, 9116, 9118, 9248	B11020D	BN7046	—	TCD-35CA
MBCP-C5F	L-5CFB, V*-5CFB	—	B11020D	B75004A	CB26	TCD-5CF, TCD-55FA

• Standard package (20pcs/100pcs)

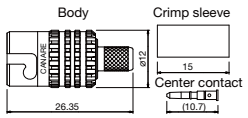
★Production by order. Please contact us for ordering lot.

- Slim design: OD 12 mm
- Compatible with 75 Ω BNC receptacles.
- Canare crimp design ensures quick and reliable installation.
- Gold plated "snap locks" center pin and beryllium copper outer contact.

Be sure to use Canare crimping tool for installing connectors on cables.



Return loss for MBCP-C3F



MBCP-C3F

Technical Note

Voltage Standing-wave Ratio (VSWR) and Return Loss

Terminating the receiving end of a limited length coaxial cable using a resistance value not equal to its characteristic impedance creates a reflected wave that returns back down the cable to the sending end. The result is interference developing between the travelling wave and the return wave which results in a standing wave that causes voltage levels to fluctuate. The degree to which terminating resistance matches the characteristic impedance is indicated using the VSWR or voltage standing-wave ratio standard shown in Fig. 1. Going hand in hand with the VSWR ratio is the return loss factor which measures the size of the reflected wave current in relation to the travelling wave current. (See Fig. 2)

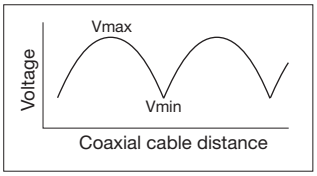


Fig. 1 Voltage Distribution Over Coaxial Cable

VSWR	Return Loss (dB)
2	9.5
1.5	14
1.2	20
1.1	26
1.05	32
1.02	40
1.01	46.1

Fig. 2 VSWR to Return Loss Conversion Table

75Ω BNC Solder Plugs

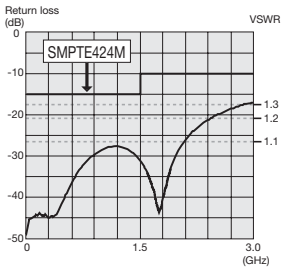
■ BCP-H Series

VSWR 1.1@ 1GHz

Model	Suitable Cable	
	Canare	Others
BCP-H3B	L-3C2VS, L-3C2V, L-3CFB, V*-3C, V*-3CFB	—
BCP-H31F	L-3CFW, V5-3CFW	—
BCP-H45HW	L-4.5CHWS	1694F
BCP-H5B	L-5C2VS, L-5C2V, L-5CFB, V*-5C, V*-5CFB	—
BCP-H51F	L-5CFW, V5-5CFW, L-5CFB, V*-5CFB	—
BCP-H5/1	L-3C2VS, L-3C2V, L-3CFB, V*-3C, V*-3CFB, L-5C2VS, L-5C2V, L-5CFB, V*-5C, V*-5CFB	—

• Standard package (20pcs)

BCP-H3B



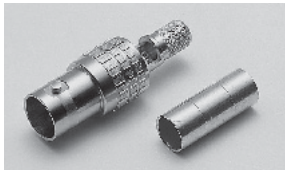
Return loss for BCP-H3B

- The tubular (ferrule) section is silver plated to make soldering easier.
- Cable stripper TS100E can be used. (Excluding BCP-H31F, BCP-H51F)

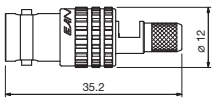
75Ω BNC Jack Plug

Model	Suitable Cable	Boot	Die Set
BCJ-C4	RG-59 B/U, LV-61S, Belden 8241, 8279, 88241	CB25	TCD-4CA TCD-451CA

•Standard package (20pcs)



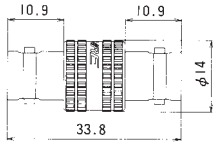
BCJ-C4



BCJ-C4

- 1.1 or less VSWR up to 1.5GHz, 1.2 or less up to 2.4GHz.
- Beryllium copper (gold plated) is used on the center contact for its superior spring characteristics. (Center contact: solder cup)

Be sure to use the Canare crimping tool for installing connectors on cables.

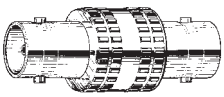


BCJ-J

75Ω BNC Extension Adapter

Model	Description
BCJ-J	Jack to Jack

•Standard package (20pcs/100pcs)



BCJ-J

- Beryllium copper is used on the center contact for its superior spring characteristics.
- 1.1 or less VSWR up to 2GHz. <Fig. 1>

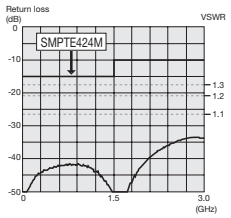


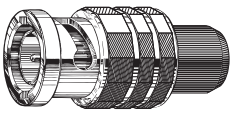
Fig.1 Return loss for BCJ-J

75Ω BNC Termination Plugs

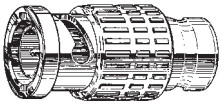
Designed for true 75Ω termination

Model	Description
BCP-PT	Low-Priced 75Ω Termination (1.0GHz Type)
BCP-TA	Standard 75Ω Termination (2.0GHz Type)
BCP-TA-CH	Standard 75Ω Termination (2.0GHz Type) with String

•Standard package (20pcs/100pcs)



BCP-PT



BCP-TA

- Includes 1/4 watt resistance.
- 1.1 or less VSWR up to 2GHz. (Up to 1GHz for BCP-PT) <Fig. 2>

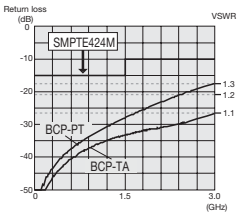


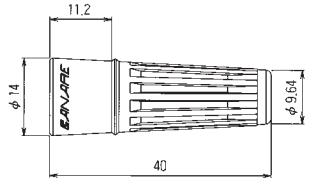
Fig.2 Return loss for BCP-PT, BCP-TA

Connector Boots

■ CB0x Series

Our best selling connector boots for Canare BNC, TNC crimp plugs.

Model	Colors Available	BCP-xx	BP-xx	TNP-xx
CB01	BLK, BLU, GRN, RED, YEL, WHT	C1		
CB02	BLK, BLU, BRN, GRN, GRY, ORN, PPL, RED, YEL, WHT	B25HD, B26, B28, A25, A25F, VA3		
CB03		B3F, B31F, A3, A32, A3F	C3, C4	C3, C4
CB04		B4F, A31, A4, A42, A4F, A55	C31	C31
CB05A		B53, B56, B5F, B51F, A5, A5F, A77, VA5, C5HD	C5, C5FA	C5

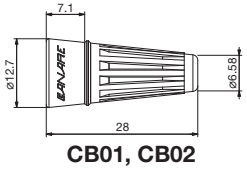


CB03, CB04, CB05A

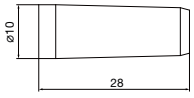
■ CB2x Series

Thinner type of CB0x series. Best fit for Canare Slim BNC, RCA, and F crimp plugs.

Model	Colors Available	Typical Connectors		
		MBCP-xx	RCAP-xx	FP-xx
CB24	BLK, BLU, GRN, RED, YEL, WHT	C3F	C3A, C3F	C3, C3F
CB25		C4, C4F	C3GS, C4A, C4F	C31, C4, C4F
CB26		C5F	C53, C5A, C5F	C5, C53A, C5F



CB01, CB02



CB24, CB25, CB26

75Ω BNC Receptacles

BNC Receptacles emphasizing true 75Ω impedance.

■ Panel Mount Receptacles

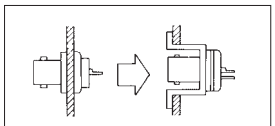
Model	Description	Suitable Cable	Die Set
BCJ-R	Jack to Solder Pin	—	—
BCJ-R/1	Jack to Solder Cup with Ground Lug	—	—
BCJ-FC1	Panel Jack	1.5C-2V	TCD-1DB
BCJ-FC1-7/16			
BCJ-JR	Jack to Jack	—	—

•Standard package (20pcs/100pcs)

■ Recessed Bulkhead Receptacles

Model	Description	Suitable Cable	Die Set
BCJ-RU	Jack to Solder Cup	—	—
BCJ-RUC1	Panel Jack	1.5C-2V	TCD-1DB
BCJ-RUD	Jack to Solder Cup, Neutrik D type	—	—
BCJ-RUDB	Jack to Solder Cup, Neutrik D type (Black)	—	—
BCJ-JRU	Jack to Jack	—	—
BCJ-JRUD	Jack to Jack, Neutrik D type	—	—
BCJ-JRUDB	Jack to Jack, Neutrik D type (Black)	—	—

•Standard package (20pcs/100pcs)



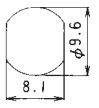
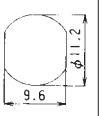
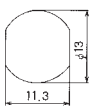
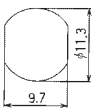
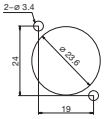
Registered design

- 1.1 or less VSWR up to 2GHz. (1.1 up to 1GHz for the Panel Jack type)
- Beryllium copper (gold plated) is used on the center contact for its superior spring characteristics.
- The recessed flush-mount configuration is designed to prevent damage on the flange type connectors.
- Two types of flange are available: ITT XLR-F77 and Neutrik D compatible.
- The panel jack connectors are based on a space-saving configuration designed for use with internally hard-wired equipment.
- Connection portion of the panel jack connectors is securely shielded by the metal crimp sleeve.

Be sure to use the Canare crimping tool for the panel jack connectors.

- A ground lug can be provided for the BCJ-R connector. Information is available on request.

■ Panel Hole Dimensions

BCJ-R	★BCJ-R/1 ★BCJ-JR	BCJ-FC1	★BCJ-FC1-7/16	BCJ-RUC1 BCJ-RU BCJ-JRU	BCJ-RUD BCJ-RUDB BCJ-JRUD BCJ-JRUDB
					

★ Indicate connectors that accept insulation bushing. Mounting hole for insulation bushing IU 7/16 should be adopted.

Insulation Bushing

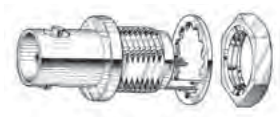
Model	Description
IU-7/16	ABS plastic, Color: White (standard stock). Black, Blue, Green, Red and Yellow (custom*)

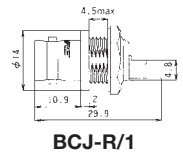
•Standard package (20pcs) *MOQ: 5000pcs

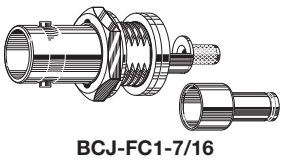
- Used to insulate a connector from a panel.

Note: Please remove washers from a connector before using IU-7/16.

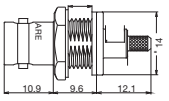
Mountable panel thickness:
1.2~1.5mm: BCJ-FPLVA, BCJ-FPLHA, BCJ-R/1
1.2~3.0mm: BCJ-FPC, BCJ-FPC02, BCJ-JR, BCJ-FPLV01

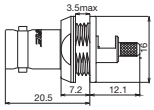

BCJ-R/1


BCJ-R/1

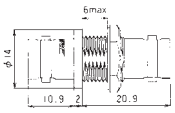

BCJ-FC1-7/16

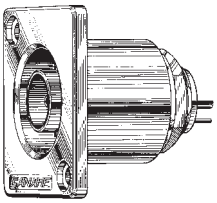

BCJ-R

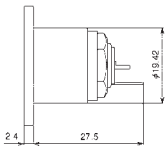

BCJ-FC1-7/16

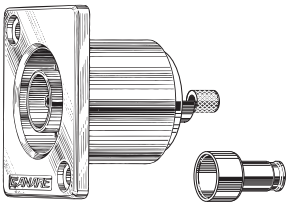

BCJ-FC1

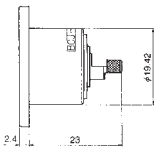

BCJ-JR

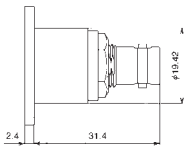

BCJ-JR

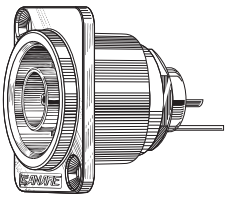

BCJ-RU

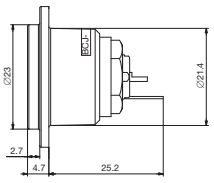

BCJ-RU

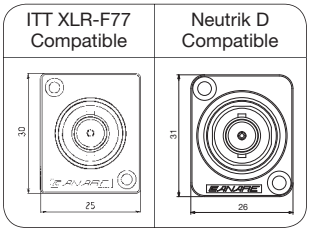

BCJ-RUC1

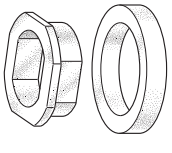

BCJ-RUC1

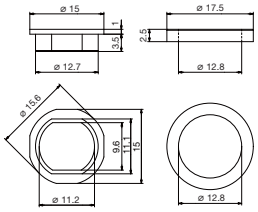

BCJ-JRU

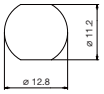

BCJ-RUD


BCJ-RUD




IU-7/16



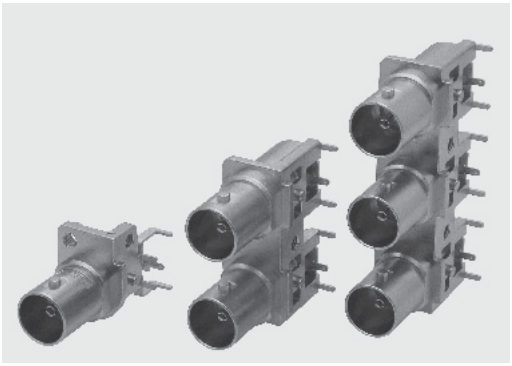

Panel Hole Dimensions

75Ω BNC PCB Mount Receptacles (Screw Type)

■ BCJ-BP Series

Model	Description	Stud Position	Panel Mount	Standard Package
BCJ-BPLHA	Right Angle	Horizontal	Front: M2.6 screw	20 pcs/100pcs
BCJ-BPLH2PA	Right Angle, Dual Jack			10 pcs
BCJ-BPLH3PA	Right Angle, Triple Jack			10 pcs
BCJ-BPC2P	Straight, Dual Jack	—		10pcs/100pcs

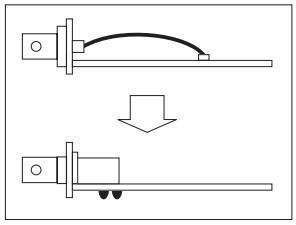
* Screws are not included.



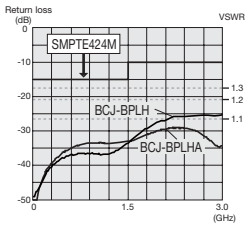
BCJ-BPLHA BCJ-BPLH2PA BCJ-BPLH3PA

Key Features and Benefits

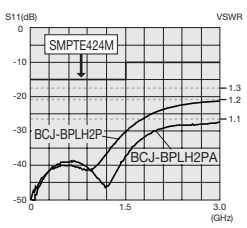
- True 75Ω PC board mount receptacle.
- VSWR 1.1 or less up to 1.5GHz, 1.2 or less up to 3GHz. (1.1 or less up to 1GHz, 1.2 or less up to 2.5GHz for BCJ-BPC2P.)
- Gold plated beryllium copper center contact.
- Can be fixed on the PC board with M2.6 screw for efficient soldering. (excluding BCJ-BPC2P)
- Space-saving design allows high-density mounting.
- Eliminates wiring material and cost.



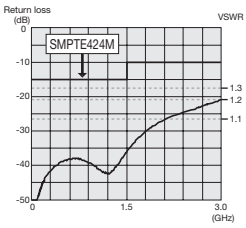
Note: Any cleaning solvents cannot be used. This leads to insulation problems.
Insulation material: m-PPO (m-PPE)



Return loss for BCJ-BPLHA, BCJ-BPLH

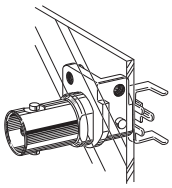


Return loss for BCJ-BPLH2P, BCJ-BPLH2PA

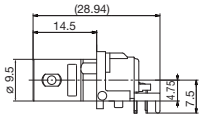


Return loss for BCJ-BPC2P

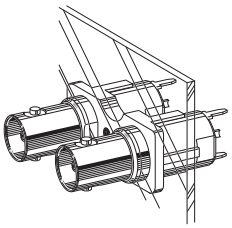
Comparison with the previous model



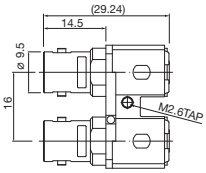
BCJ-BPLHA



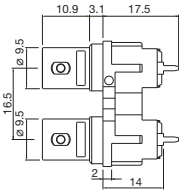
BCJ-BPLHA



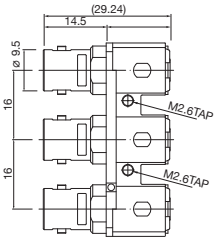
BCJ-BPC2P



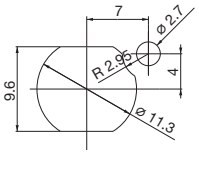
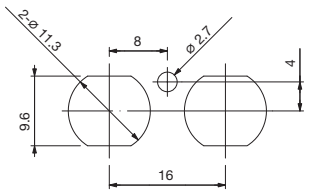
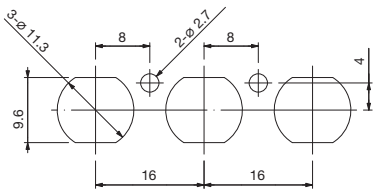
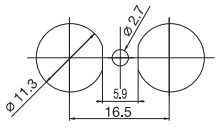
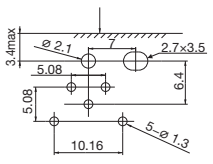
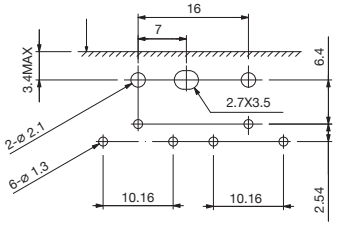
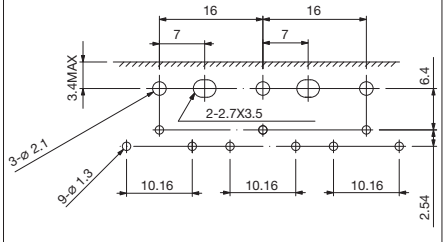
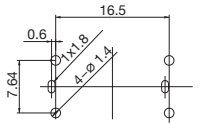
BCJ-BPLH2PA



BCJ-BPC2P



BCJ-BPLH3PA

	BCJ-BPLHA	BCJ-BPLH2PA	BCJ-BPLH3PA	BCJ-BPC2P
Panel Hole Dim.				
	Screw: M2.6 t1.6	Screw: M2.6 t1.6	Screw: M2.6 t1.6	Screw: M2.6 t1.2
PCB Hole Dim.				
	t2.0 (BOTTOM VIEW)	t2.0 (BOTTOM VIEW)	t2.0 (BOTTOM VIEW)	t1.6 (BOTTOM VIEW)

75Ω BNC PCB Mount Receptacles (Hex Nut Type)

■ BCJ-FP Series

Model	Description	Stud Position	Panel Mount
BCJ-FPLVA	Right Angle	Vertical	Front: Hex nut and lock washer
BCJ-FPLV01	Right Angle, Low-cost Model		
★ BCJ-FPLV-L	Right Angle (10pcs)		
BCJ-FPLHA	Right Angle	Horizontal	
BCJ-FPC	Straight	—	
BCJ-FPC02	Straight, Low-cost Model		

•Standard package (20pcs/100pcs) ★Production by order. Please ask us for ordering lot.

■ BCJ-RP Series

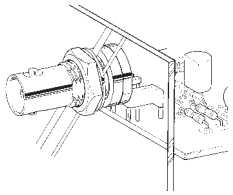
Model	Description	Stud Position	Panel Mount
BCJ-RPLV	Right Angle	Vertical	Rear: Hex nut and lock washer
BCJ-RPLH	Right Angle	Horizontal	
BCJ-RPC	Straight, Through Hole Mount	—	
BCJ-RPC/1	Straight, Surface Mount		

•Standard package (20pcs/100pcs)

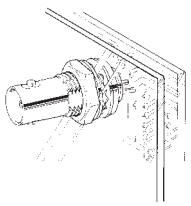
- VSWR 1.1 or less up to 1GHz, 1.2 or less up to 2.5GHz. (1.1 up to 3GHz for BCJ-FPLV-L)
- Gold plated beryllium copper center contact.

Note: Any cleaning solvents cannot be used. This leads to insulation problems.
Insulation material: m-PPO (m-PPE)

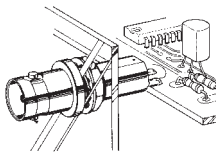
Right Angle Type		Straight Type	
 BCJ-FPLVA	 BCJ-FPLV01	 BCJ-FPC	 BCJ-FPC02
 BCJ-FPLV-L	 BCJ-FPLHA	 BCJ-RPC	 BCJ-RPC/1
 BCJ-RPLH	 BCJ-RPLV		



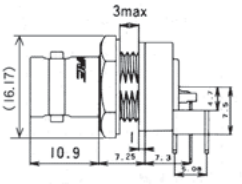
BCJ-FPLV01



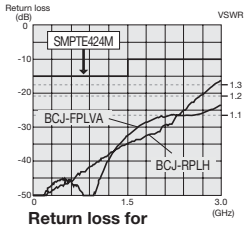
BCJ-FPC02



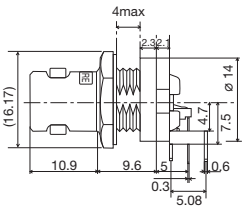
BCJ-RPC/1



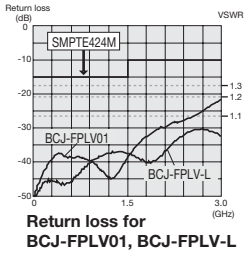
BCJ-FPLVA



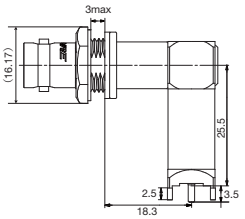
Return loss for BCJ-FPLVA, BCJ-RPLH



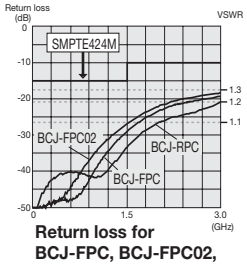
BCJ-FPLV01



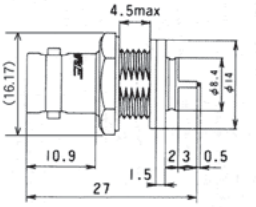
Return loss for BCJ-FPLV01, BCJ-FPLV-L



BCJ-FPLV-L

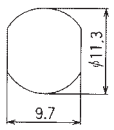
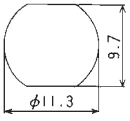
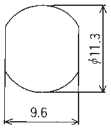
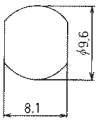


Return loss for BCJ-FPC, BCJ-FPC02, BCJ-RPC

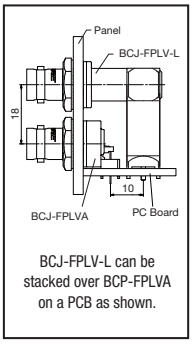


BCJ-FPC

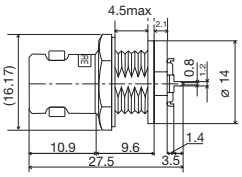
<Panel Hole Dimensions>

BCJ-FPLVA* BCJ-FPLV01* BCJ-FPLV-L*	BCJ-FPLHA*	BCJ-FPC* BCJ-FPC02*	BCJ-RPC/1 BCJ-RPC BCJ-RPLV BCJ-RPLH
			

* BCJ-FP series accept insulation bushing IU-7/16. Mounting hole for IU-7/16 should be adopted. (See page 25)

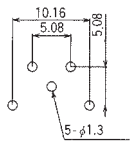
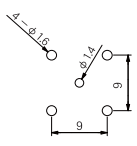
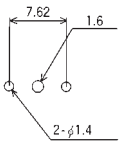
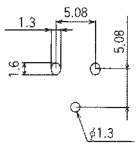
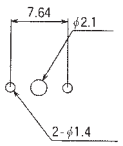


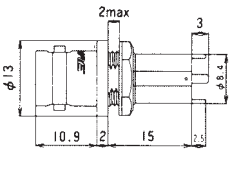
BCJ-FPLV-L can be stacked over BCP-FPLVA on a PCB as shown.



BCJ-FPC02

<PC Board Hole Dimensions>

BCJ-FPLVA BCJ-FPLV01 BCJ-FPLHA	BCJ-FPLV-L	BCJ-FPC BCJ-FPC02	BCJ-RPLV BCJ-RPLH	BCJ-RPC
				
t 2.0	t 2.0	t 2.0	t 3.0	t 1.6



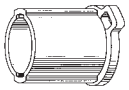
BCJ-RPC

BNC Dust Caps

Model	Description
BCJ-DC	Polyethylene (Black)
BCJ-DC-CH	Polyethylene (Black) with string

•Standard package (20pcs/100pcs)

● Protects unused BNC receptacles from dirt and dust.



BCJ-DC

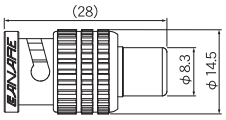
BNC - RCA Adapter

Model	Description
BCP-RCAJ	RCA Jack (F) to BNC Plug (M)
BCJ-RCAP	BNC Jack (F) to RCA Plug (M)

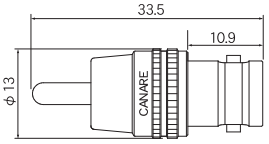
•Standard package (1pc)

● Gold plated center contact
● Secure finger grip and reliable mating

BCP-RCAJ



BCJ-RCAP



75Ω N Solder Plug

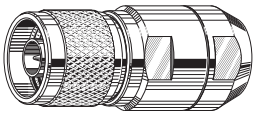
Model	Suitable Cable
NCP-H8HD	L-8CHD

•Standard package (1pc)

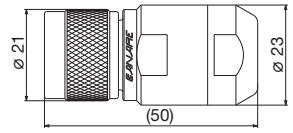
● Gold plating on the contact pin prevents deterioration, even after years of use.
● 1.1 or less VSWR up to 2GHz. <Fig. 3>
● Solder type

Tools required: 17mm and 21mm wrenches

Caution: The connecting section of the N connector uses a shape that conforms to the IEC169-16's 75Ω impedance standard. Note that the 50Ω N and other connectors that do not conform to this specification can not be connected.



NCP-H8HD



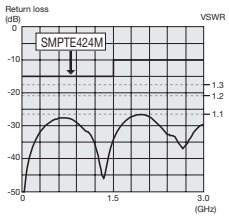


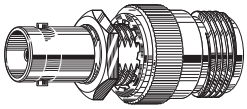
Fig.3 Return loss for NCP-H8HD

75Ω N to BNC Adapter

Model	Description
NCJ-BCJR	N (F) - BNC (F)

•Standard package (1pc)

● Beryllium copper (gold plated) is used on the center contact for its superior spring characteristics.
● 1.1 or less VSWR up to 2GHz. <Fig. 4>
● Panel mountable as well. For isolation from the panel, use Canare isolation bushing IU-7/16.(See page 25)



NCJ-BCJR

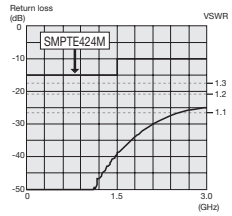
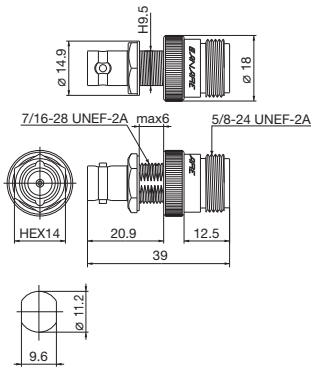


Fig.4 Return loss for NCJ-BCJR



Panel Hole Dimensions

75Ω Multi-pin Coax Connectors

Single connector handles load of up to five 75Ω coaxial connectors.

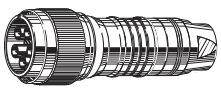
Model	Suitable Cable	Die Set	Description
MCM-V5C3	V5-3C	TCD-35CA	Plug
MCF-V5C3	V5-3C, L-3C2V	TCD-35CA	Receptacle

Model	Description
DCM01	Dust Cap for MCM-V5C3
DCF01	Dust Cap for MCF-V5C3

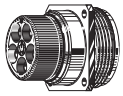
● 1.2 or less VSWR up to 1.5GHz.
● Crimp system ensures quick and reliable installation.

* Replacement unit also available. MCM-V5C3: BN9078A MCF-V5C3: BN9079B

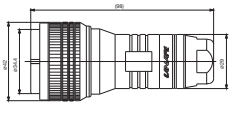
Be sure to use the Canare crimping tool for installing connectors on cables.

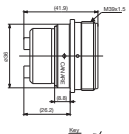


MCM-V5C3

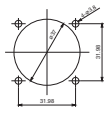


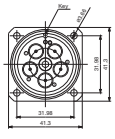
MCF-V5C3





Panel Hole Dimensions (Mounting screw M3 x 4 pcs)





Replacement Unit BN9078A **Replacement Unit BN9079B**

75Ω Triaxial Connectors

Canare CC series cover global triaxial interconnection. CC-F series are ideal for interconnecting European triax system and CC-K series for American triax system.

Key Features and Benefits

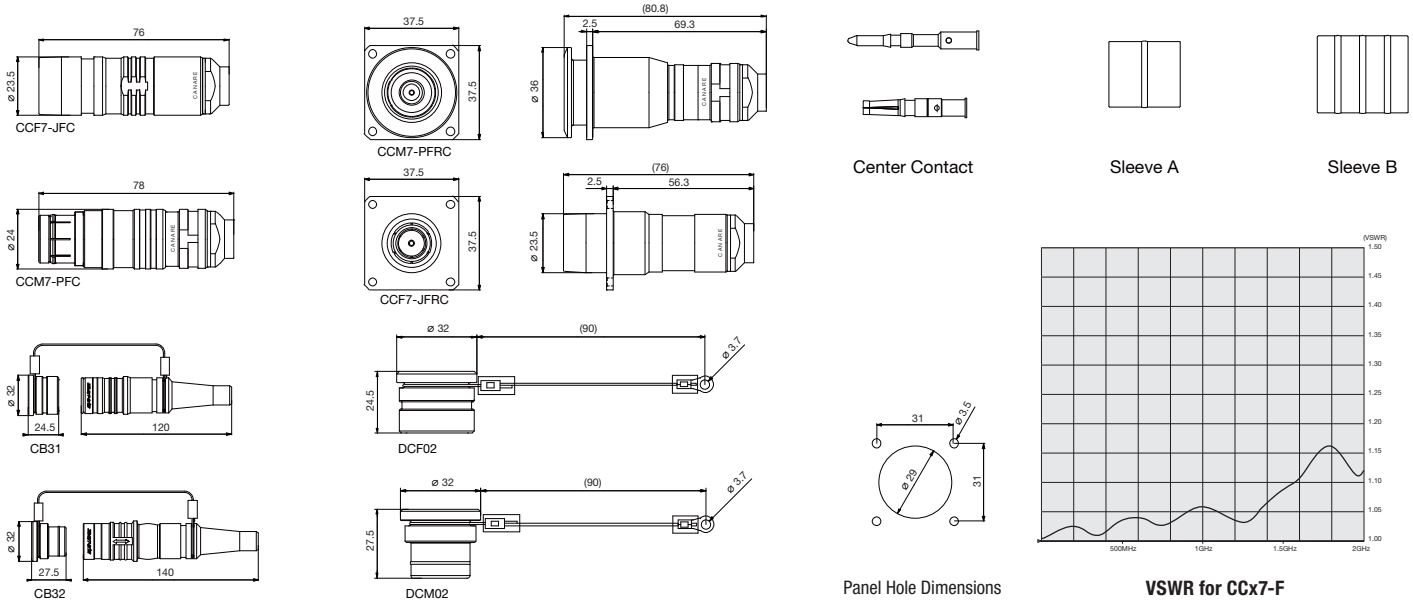
- True 75Ω, DC 1.5GHz; ≥20dB return loss (≤1.2 VSWR)
- Push-lock mechanism
  - no cable stress when detaching to prevent cable break
- Reliable crimp system
- Rugged and durable construction

CC-F Series

Cable compatibility meets European interconnecting requirements.

Model	Description	Suitable Cable		Boot/Cap	Center contact	Sleeve A	Sleeve B	Crimp Tool
		Canare	Others					
CCF5-JFC	Crimp type, Female cable mount	L-5CFTX	Belden: 7783A Klotz: TRIAX8 Fujikura: 4.8/1.0 EFTXF	CB31	★ BN9194	★ BN7120	★ BN7121	TC-1 + TCD-65C
CCM5-PFC	Crimp type, Male cable mount			CB32	★ BN1135	★ BN7120	★ BN7121	
CCF5-JFRC	Crimp type, Female panel mount			DCF02	★ BN9194	★ BN7120	★ BN7121	
CCM5-PFRC	Crimp type, Male panel mount			DCM02	★ BN1135	★ BN7120	★ BN7121	
CCF7-JFC	Crimp type, Female cable mount	L-7CFTX	Belden: 7784AS Klotz: TRIAX11 Bedea: SUPERFLEX11	CB31	★ BN9182A	★ BN7113	★ BN7114	TC-2 + TCD-96C
CCM7-PFC	Crimp type, Male cable mount			CB32	★ BN1131	★ BN7113	★ BN7114	
CCF7-JFRC	Crimp type, Female panel mount			DCF02	★ BN9182A	★ BN7113	★ BN7114	
CCM7-PFRC	Crimp type, Male panel mount			DCM02	★ BN1131	★ BN7113	★ BN7114	

★Production by order. Please ask us for ordering lot.

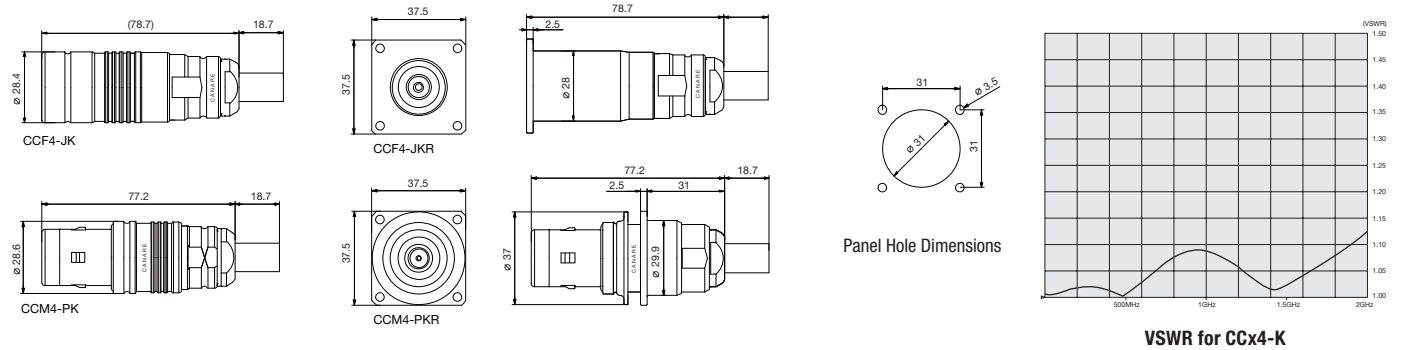


CC-K Series

Cable compatibility meets American interconnecting requirements.

Model	Description	Suitable Cable		Retrofit Kit	Boot/Cap	Crimp Tool
		Canare	Others			
CCF4-JK	Crimp type, Female cable mount	L-4CFTX	Belden: 1856A, 1857A, 9267 Gepco: LVT61859, VT61859	★ BN9127A	CB23	TC-1 + TCD-316C
CCM4-PK	Crimp type, Male cable mount			★ BN9128B	CB22	
CCF4-JKR	Crimp type, Female panel mount			★ BN9127A	DCM02	
CCM4-PKR	Crimp type, Male panel mount			★ BN9128B	DCM03	

★Production by order. Please ask us for ordering lot.



RCA Pin Connectors

■ RCAP-C Series (Crimp Plugs)

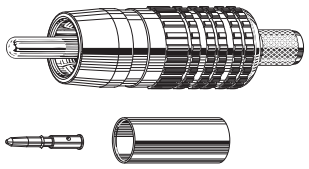
	Model	Suitable Cable		Center Pin	Sleeve	Boot	Die Set
		Canare	Others				
★	**RCAP-C25F**	L-2.5CFB	1855A, 8218, 1417B, 1418B	B11014E	★ BN7029C	—	TCD-35CA
	RCAP-C25HD	L-2.5CHD	—	B11015E	★ BN7129	—	TCD-35CA
	RCAP-C3A	L-3C2VS, L-3C2V, V*-3C	—	B11014E	BN7003A	CB24	TCD-35CA
★	**RCAP-C3GS**	GS-6	—	★ BN1093	★ BN7079	CB25	TCD-35D
	RCAP-C3F	L-3CFB, V*-3CFB	—	B11015E	BN7003A	CB24	TCD-35CA
★	**RCAP-C42**	—	1505F	B11016E	★ BN7011	—	TCD-31C
	RCAP-C4A	LV-61S	8241, 8279, RG-59B/U	B11015E	BN7015A	CB25	TCD-4CA, TCD-451CA
	RCAP-C4F	L-4CFB, V*-4CFB	1505A, 1505ANH, 8212, 8241F, 9167, 9259, 9659	B11016E	BN7015A	CB25	TCD-4CA, TCD-451CA
	RCAP-C53	L-4.5CHD	1694A, 9066, 9116, 9118, 9248	B11020D	★ BN7046	CB26	TCD-35CA
	RCAP-C5A	L-5C2VS, L-5C2V, V*-5C	—	B11016E	BN7016	CB26	TCD-35CA
	RCAP-C5F	L-5CFB, V*-5CFB	—	B11020D	B75004A	CB26	TCD-5CF, TCD-55FA
	RCAP-C77	LV-77S	8281F	B11016E	B75004A	CB26	TCD-5CF, TCD-55FA

•Standard package (20pcs/100pcs)

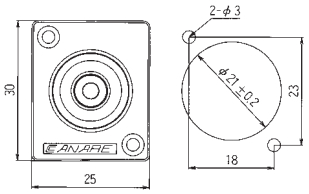
★Production by order. Please ask us for ordering lot.

● Canare crimp design ensures quick and reliable installation.
● The crimp tool for the RCAP-C can be used for the Canare crimp BNC plugs as well, thus saving on extra equipment.

Be sure to use the Canare crimping tool for installing connectors on cables.



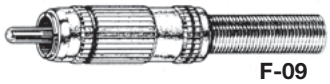
RCAP-C3A



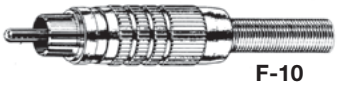
■ Solder Plugs

Model	Description
F-09	RCA Pin Plug
F-10	RCA Pin Plug (Long sleeve)

•Standard package (10pcs)



F-09



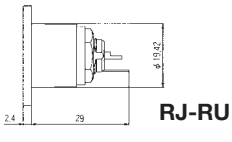
F-10

● Offer strong cable clamping that prevents severed lines.
● Suited to cables up to 6.0mmø in size.
•Accommodates cables up to 7.5mmø in size when spring removed.

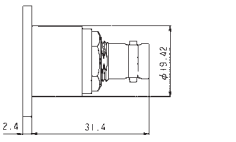
■ Recessed Bulkhead Receptacles

Model	Description
RJ-RU	Jack to Solder Cup
RJ-BCJRU	RCA (F) - BNC (F)
RJ-RUD	Jack to Solder Cup, Neutrik D Type
RJ-RUDB	Jack to Solder Cup, Neutrik D Type (Black)
RJ-BCJRUD	RCA (F) - BNC (F), Neutrik D Type
RJ-BCJRUDB	RCA (F) - BNC (F), Neutrik D Type (Black)

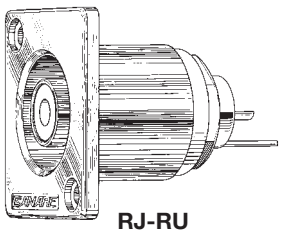
•Standard package (20pcs/100pcs) by insulation color.



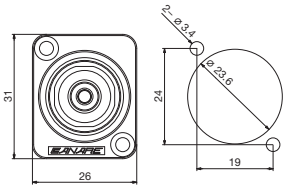
RJ-RU

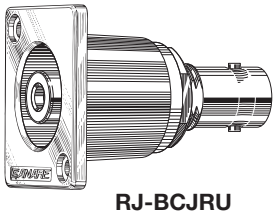


RJ-BCJRU

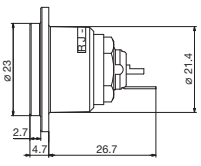


RJ-RU

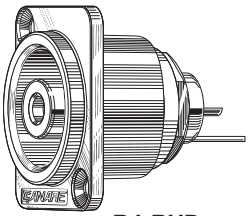




RJ-BCJRU



RJ-RUD



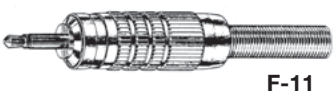
RJ-RUD

● Two types of flange are available: ITT XLR-F77 and Neutrik D compatible.
● VSWR is 1.1 or less up to 50MHz.
● Color-coded insulation enables users to easily distinguish between the R, G and B elements. Users can choose as required from five colors, including red, green, blue, yellow and white.

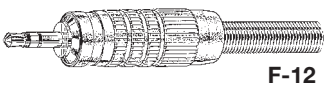
Phone Plugs

Model	Description
F-11	3.5mm Mini Phone TS
F-12	3.5mm Mini Phone TRS
F-15	6.3mm (1/4") TS Phone
F-16	6.3mm (1/4") TRS Phone

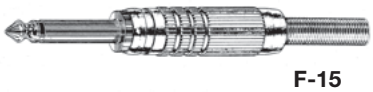
•Standard package (10pcs)



F-11



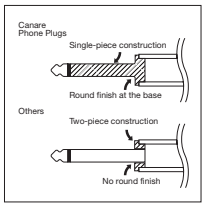
F-12



F-15

F-16

● Featuring a properly cable cramp system ensures long life reliability.
● Suited to cables up to 6.0mmø in size.
•Accommodates cables up to 7.5mmø in size when spring removed.



Canare's durable design

F Connectors

This type is used in such applications as home television receivers for cable television (CATV) systems.

■ FP-C Series (Crimp Plugs)

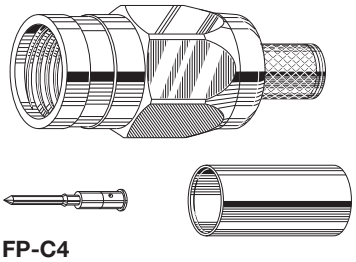
	Model	Suitable Cable		Center Pin	Sleeve	Boot	Die Set
		Canare	Others				
	FP-C25HD	L-2.5CHD	—	BN1003B	★ BN7129	—	TCD-35CA
	FP-C3	L-3C2VS, L-3C2V, V*-3C	—	BN1002B	BN7003A	CB24	TCD-35CA
	FP-C31	L-3C2W	—	BN1002B	★ BN7011	CB25	TCD-31C
	FP-C3F	L-3CFB, V*-3CFB	—	BN1003B	BN7003A	CB24	TCD-35CA
	FP-C4	LV-61S	8241, 8279, RG-59B/U	BN1003B	BN7015A	CB25	TCD-4CA, TCD-451CA
	FP-C4F	L-4CFB, V*-4CFB	1505A, 1505ANH, 8212, 8241F, 9167, 9259, 9659	BN1004B	BN7015A	CB25	TCD-4CA, TCD-451CA
	FP-C5	L-5C2VS, L-5C2V, V*-5C	—	BN1004B	BN7016	CB26	TCD-35CA
	FP-C52	L-5C2W	—	BN1004B	★ BN7014	—	TCD-451CA
	FP-C53A	L-4.5CHD	1694A, 9066, 9116, 9118, 9248	BN1005B	★ BN7046	CB26	TCD-35CA
★	**FP-C55A**	—	1695A, 89120, 87120, 633948, 9116P	BN1005B	★ BN7045A	—	TCD-35CA
	FP-C5F	L-5CFB, V*-5CFB	—	BN1005B	B75004A	CB26	TCD-5CF, TCD-55FA
★	**FP-C71A**	—	7731A, 9064, 9292, 1617A, 9011	★ BN1041A	★ BN7021A	—	TCD-7CA
	FP-C7FA	L-7CFB	—	★ BN1030A	★ BN7021A	—	TCD-7CA

•Standard package (20pcs/100pcs)

★Production by order. Please ask us for ordering lot.

- Lock mechanism improves reliability by preventing shifting or detaching of the center pin.
- The tools and cable stripper can be used for the Canare crimp BNC plugs as well, thus saving on extra equipment.
- VSWR of 1.1 or less up to 2GHz. Compatible with broadcast satellite (BS) and communications satellite (CS) signals.
- Designed for indoor use.

Be sure to use the Canare crimping tool for installing connectors on cables.



FP-C4

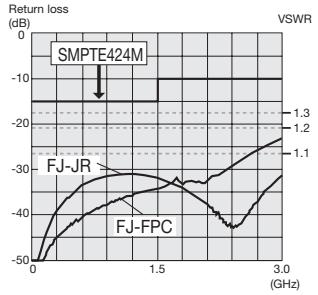


Fig.1 Return loss for FJ-FPC and FJ-JR

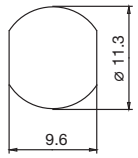
■ Panel Mount Receptacles

Model	Description
FJ-JR	Jack to Jack
FJ-FPC	PC Board Straight Mount

•Standard package (20pcs/100pcs)

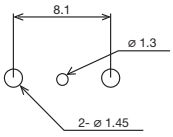
- VSWR of 1.1 or less up to 2GHz. Compatible with broadcast satellite (BS) and communications satellite (CS) signals. <Fig. 1>
- For insulation from the panel, use insulation bushing IU-7/16. (Panel thickness: 1.2~3.0mm)

Panel Mount Hole Dimensions

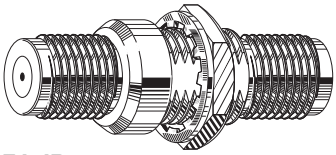


FJ-JR, FJ-FPC

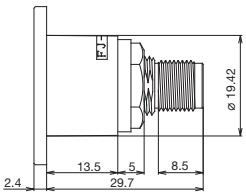
PC Hole Dimensions

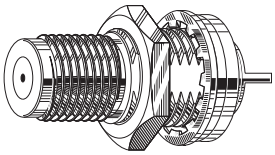


FJ-FPC

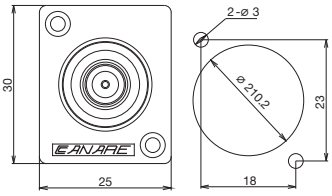


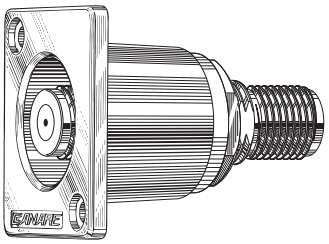
FJ-JR





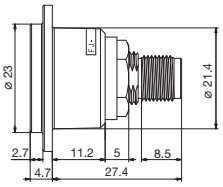
FJ-FPC





FJ-JRU

FJ-JRU

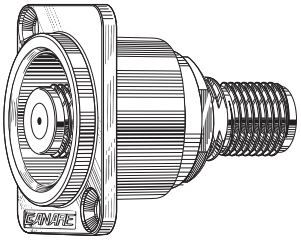


■ Recessed Bulkhead Receptacles

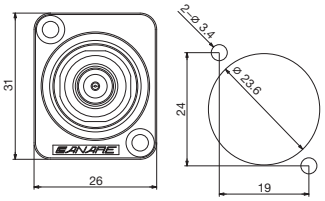
Model	Description
FJ-JRU	Jack to Jack
FJ-JRUD	Jack to Jack, Neutrik D Type
FJ-JRUDB	Jack to Jack, Neutrik D Type (Black)

•Standard package (20pcs/100pcs)

- Two types of flange are available: ITT XLR F77 and Neutrik D compatible.



FJ-JRUD



FJ-JRUD

50Ω BNC Crimp Plugs

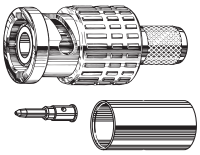
VSWR of 1.1 or less up to 2GHz, 1.2 or less up to 4GHz. <Fig.1>

■ BP-C Series

Model	Suitable Cable	Center Pin	Sleeve	Boot	Die Set (Model: TCD-***)		
					55FA	35D	3151D
BP-C3	L-3D2V, 3D-2V	★ BN1023A	BN7003A	CB03		●	
BP-C31	L-3D2W, 3D-2W	★ BN1023A	★ BN7011	CB04			●
BP-C4	RG-58C/U, RG-58A/U	★ BN1024A	★ BN7030A	CB03		●	
BP-C5	L-5D2V, 5D-2V	★ BN1025B	BN7016	CB05A		●	
BP-C5FA	L-5DFB, 5D-FB	★ BN1016C	B75004A	CB05A	●		
BP-C51	L-5D2W, 5D-2W	★ BN1025B	BN7002	—			●

•Standard package (20pcs)

★ Production by order. Please ask us for ordering lot.



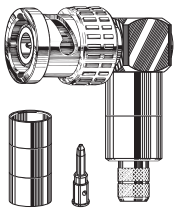
BP-C5

■ BP-LC Series (Right Angle Type)

Model	Suitable Cable	Center Pin	Sleeve	Die Set
BP-LC31	L-3D2W, 3D-2W	★ BN1023A	★ BN7011	TCD-3151D
BP-LC51	L-5D2W, 5D-2W	★ BN1025B	BN7002	

•Standard package (20pcs)

★ Production by order. Please ask us for ordering lot.



BP-LC31

- ● Lock mechanism used on insulation improves reliability by preventing shifting or detaching of the contact pins.
- ● Elongated body design for straight type enables easy attachment and removal.
- ● Gold plating on the contact pin prevents deterioration, even after years of use.
- ● Use of crimping to attach the connectors ensures quick, reliable installation.

Be sure to use the Canare crimping tool for installing connectors on cables.

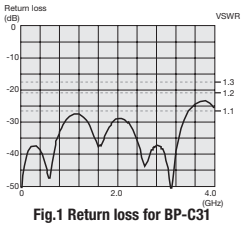


Fig.1 Return loss for BP-C31

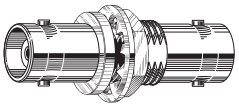
50Ω BNC Receptacles

■ Panel Mount

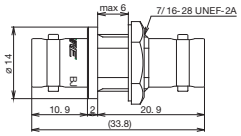
Model	Description
BJ-JR	Jack to Jack

•Standard package (20pcs)

- ● Mounting hole size is same as that for BCJ-R/1 connector.



BJ-JR



BJ-JR

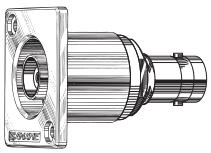
■ Recessed Bulkhead Receptacles

Model	Description
BJ-JRU	Jack to Jack
★ **BJ-JRUD**	Jack to Jack Neutrik D Type

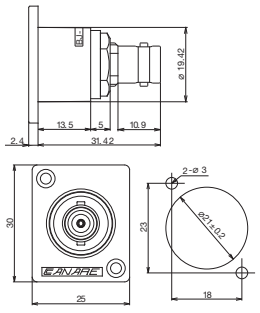
•Standard package (20pcs)

★ Production by order. Please ask us for ordering lot.

- ● Recessed flush mount panel jack design prevents the connector from breakage. (See page 25)
- ● Two types of flange are available: ITT XLR-F77 and Neutrik D compatible.



BJ-JRU



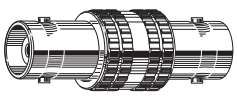
BJ-JRU

50Ω BNC Extension Adapter

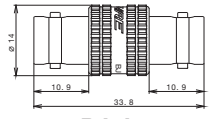
Model	Description
BJ-J	Jack to Jack

•Standard package (20pcs)

- ● VSWR of 1.1 or less up to 4GHz. <Fig.2>



BJ-J



BJ-J

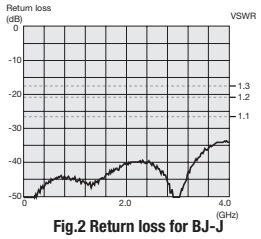


Fig.2 Return loss for BJ-J

50Ω TNC Crimp Plugs

■ TNP-C Series

	Model	Suitable Cable	Boot	Die Set
★	TNP-C3	L-3D2V, 3D-2V	CB03	TCD-35D
	TNP-C31	L-3D2W, 3D-2W	CB04	TCD-3151D
★	TNP-C4	RG-58C/U, RG-58A/U	CB03	TCD-35D
	TNP-C5	L-5D2V, 5D-2V	CB05A	
	TNP-C51	L-5D2W, 5D-2W	—	TCD-3151D
	TNP-C5F	L-5DFB, 5D-FB	CB05A	TCD-35DF TCD-55FA

•Standard package (20pcs) ★ Production by order. Please ask us for ordering lot.

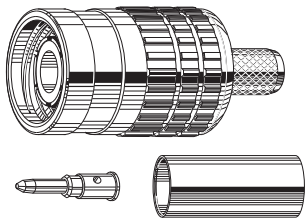
■ TNP-LC Series (Right Angle Type)

Model	Suitable Cable	Die Set
TNP-LC31	L-3D2W, 3D-2W	TCD-3151D
TNP-LC51	L-5D2W, 5D-2W	

•Standard package (20pcs)

- VSWR of 1.1 or less up to 2GHz, 1.2 or less up to 4GHz. <Fig. 1>
- Use of crimping to attach the connectors ensures quick, reliable installation.
- Crimping tool can be used for the Canare crimp BNC plugs as well, thus saving on extra equipment.
- Elongated body design for straight type enables easy attachment and removal.

Be sure to use the Canare crimping tool for installing connectors on cables.



TNP-C3

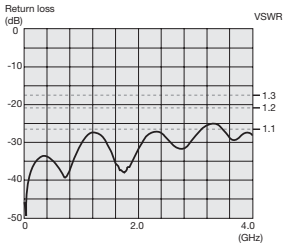
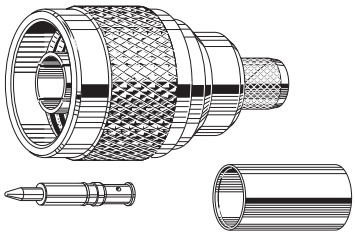


Fig.1 Return loss for TNP-C3



NP-C51

50Ω N Crimp Plugs

■ NP-C Series

Model	Suitable Cable	Boot	Die Set
NP-C31	L-3D2W, 3D-2W	CB04	TCD-3151D
NP-C51	L-5D2W, 5D-2W	—	

•Standard package (20pcs)

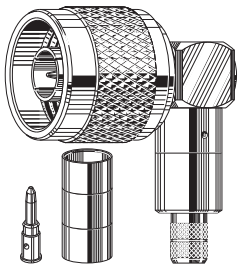
■ NP-LC Series (Right Angle Type)

Model	Suitable Cable	Die Set
NP-LC31	L-3D2W, 3D-2W	TCD-3151D
NP-LC51	L-5D2W, 5D-2W	

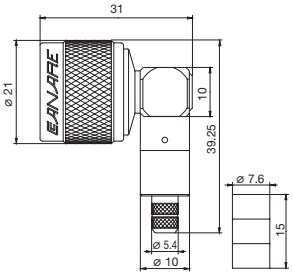
•Standard package (20pcs)

- VSWR of 1.1 or less up to 2GHz, 1.2 or less up to 4GHz.
- Lock mechanism used on insulation prevents shifting or detaching of the contact pins.
- Use of crimping to attach the connectors ensures quick, reliable installation.

Be sure to use the Canare crimping tool for installing connectors on cables.



NP-LC31



NP-LC31

50Ω SMA Crimp Plugs

■ SMAP-C Series

Model	Suitable Cable	Die Set
SMAP-C1	1.5D-QEW	TCD-1DB
SMAP-C3F	L-3DFB	TCD-35DF
SMAP-C31A	L-3D2W, 3D-2W	TCD-3151D
SMAP-C51	L-5D2W, 5D-2W	
SMAP-C5F	L-5DFB, 5D-FB	TCD-35DF TCD-55FA

•Standard package (20pcs)

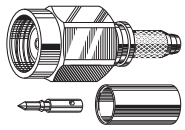
■ SMAJ-C Series

	Model	Suitable Cable	Die Set
	SMAJ-C3F	L-3DFB	TCD-35DF
★	SMAJ-C51	L-5D2W, 5D-2W	TCD-3151D
	SMAJ-C5F	L-5DFB, 5D-FB	TCD-35DF TCD-55FA

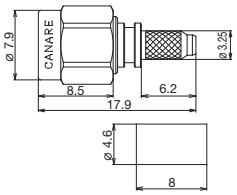
•Standard package (20pcs) ★ Production by order. Please ask us for ordering lot.

- Center contact for SMAP-C1 is of solder type.
- VSWR of 1.1 or less up to 2GHz, 1.2 or less up to 4GHz. (For SMAP-C1, VSWR is 1.2 or less up to 2GHz.)

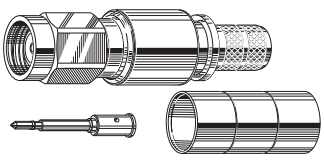
Be sure to use the Canare crimping tool for installing connectors on cables.



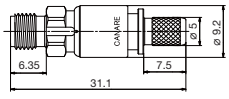
SMAP-C1

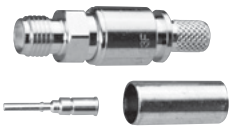


SMAP-C1

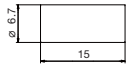


SMAP-C31A





SMAJ-C3F



SMAJ-C3F

TS100E Coaxial Cable Stripper

- For most Canare 75Ω BNC, DIN, RCA and F crimp plugs.
- Rotary knob selects 5 different cable setups.
- Make your own cable setting within cable O.D. 4mm~11mm
- Hexagonal wrench is attached for quick blade adjustment
- 1 blade attached, and also sold separately. (TSC)

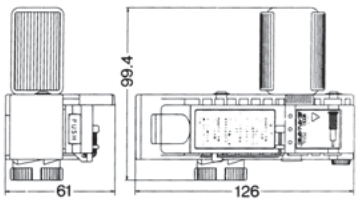
Model	Description
TS100E	(Preset to LV-77S·L-5CFB, V*-5CFB, V*-5C, LV-61S·L-4CFB, V*-3C)
TSC (1pc)	Replaceable blade

TS100E

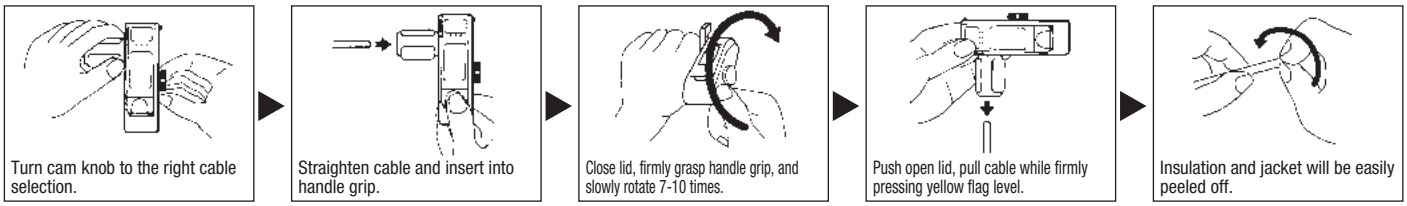
Note:

The following types of cables may not be accurately processed by Canare's TS100E Cable Stripper, owing to their construction.

1. Cables employing such hard jacket material as polyethylene.
2. Cables employing such particularly soft insulator material as high-foam polyethylene.
3. Cables employing steel wire and semirigid pipe for outer conductor.



(mm)



Turn cam knob to the right cable selection.

Straighten cable and insert into handle grip.

Close lid, firmly grasp handle grip, and slowly rotate 7-10 times.

Push open lid, pull cable while firmly pressing yellow flag level.

Insulation and jacket will be easily peeled off.

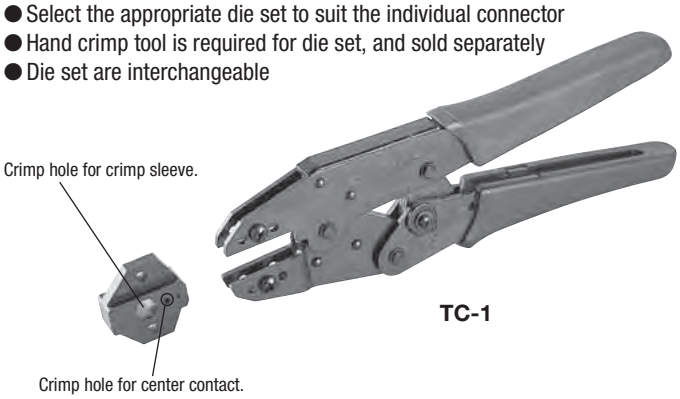
Crimp Tools

Canare crimp tool offers reliable high-quality crimping performance in an easy-to-use design.

■ Die Sets ■ Hand Crimp Tools

Model	Model
TCD-1DB	TC-1
TCD-31C	
TCD-3151D	
TCD-316C	
TCD-35CA	
TCD-35D	
TCD-35DF	
TCD-4CA	
TCD-451CA	
TCD-55FA	
TCD-5CF	
TCD-5HD	
TCD-65C	
TCD-67HD	
TCD-7CA	
TCD-96C	TC-2
TCD-D253F	TC-1
TCD-D534F	

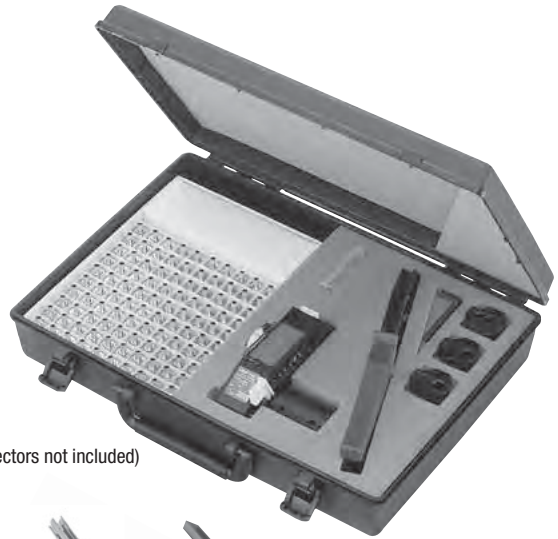
- Select the appropriate die set to suit the individual connector
- Hand crimp tool is required for die set, and sold separately
- Die set are interchangeable



TC-1

■ Accessories

Model	Description	Length
TB-2A	Tool case	—
BET-12	Extraction tool for BNC straight plug	12 inch
BET-MBNC	Extraction tool for MBCP-C series	30 cm
BET-DIN	Insertion / extraction tool for DCP-C series	30 cm



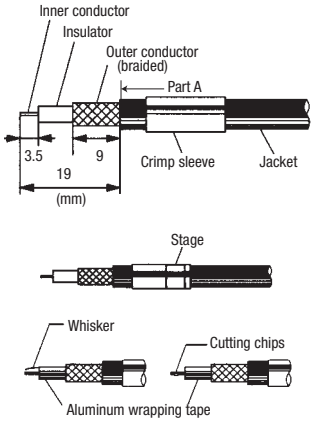
TB-2A
(tools and connectors not included)

BET-12

BET-MBNC

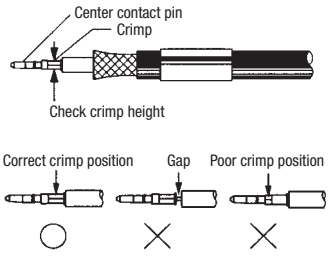
BET-DIN

Crimp Connector Assembly Instructions

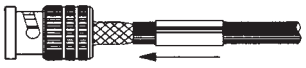


Confirm compatibility of the connector and cable prior to assembly.

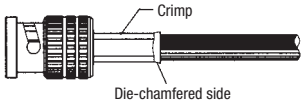
1. Slide the crimp sleeve over the cable and strip the jacket, braided shield, and insulation of the coaxial cable as shown at left.
   - For cables with stranded inner conductor, twist the strands in the same direction as plied after removing the insulation.
   - For a crimp sleeve with steps, slip it over the cable from the stepped end, as in the diagram.
   - If any aluminum foil shield is left on the cable, it may get stuck in the mouth of connector, making insertion impossible.
   - Remove all stray strands and offcuts of the aluminum foil shield to avoid possible short circuiting.
   - Make sure the inner conductor is free of all insulation debris and offcuts to ensure complete crimping.



2. Place the center contact pin of the connector on the inner conductor of the cable and crimp the center contact pin at the correct position (without remaining a gap) as shown at left, using the specified crimp tool and die set.
   - To confirm the crimping properly, measure the crimp height after removing burrs with a knife. If it is not within the ideal value range, adjust the crimp tool.
   - Do not crimp the center contact pin at the stepped root end.
   - Confirm the center contact pin is crimped straight to the inner conductor. If the center contact pin is slanted, align it gently.



3. Hold the cable and push it into the connector body until the center contact is locked in place. You may feel a click sound when the center contact pin is locked.
   - Pull the cable gently (less than 4.5lbs or 19.6N) to confirm that is locked.



4. Slide crimp sleeve up against connector body over the braided shield until it butts against the connector body. Center the die over the crimp sleeve and crimp in place, using the specified crimp tool and die set.
   - Do not pull the cable while crimping is executed.

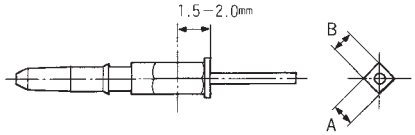
Adjusting Crimp Tool

1. Measuring Crimping height

Crimp height is measured after the crimp is made. As shown in the figure, the sum of the measured values for both directions is divided by two to arrive at the crimp height. The ideal value range for the BCP-A3 connector, for example, is 1.4mm to 1.5mm. When this value is lower (overcrimping occurs) than the recommended crimp height, the crimp becomes very hard. A value higher (undercrimping occurs) than the recommended value can result in increased electrical resistance and a physically weaker crimp. Either digital calipers or a micrometer should be used for measuring crimp height.

2. Measuring Frequency

Crimp height is measured prior to commencing use of the crimp tool and always when changing the crimping die. After this, the crimp height is regularly measured after about each 1,000 crimps.



Crimp height value= (A+B) /2

Refer to the separately included manual for the appropriate crimp height values for individual connectors.

3. Tool Measuring Procedures

Crimp force increases and crimp height decreases when the tool's adjuster dial is turned in the direction of the 9. The dial is adjusted by first releasing it using a screw driver.

F A Q

Q Does it matter in which direction crimp sleeves are attached?

A For BCP-A3–use and other non-stepped (straight type) crimp sleeves, it does not matter in which direction the crimp sleeve is attached. The attachment direction also does not matter for BCP-A5F–use and other specific-use types that have a chamfer (groove) at one end of the crimp sleeve.

However, stepped crimp sleeves such as those for BCP-C1, etc. are directional and must be attached in the direction shown in the diagram below, with the cable threaded through the sleeve starting from the end with the step (that is, the end with smaller-diameter hole).

Q What should be done with an aluminum foil shield?

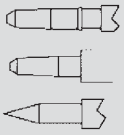
A Strip the aluminum foil shield to the root of the braided shield (to the edge of the jacket).

If any aluminum foil shield is left on the cable, it may get stuck in the mouth of connector, making insertion impossible.

Q Why do some BNC plugs made by other companies have a sharp point at the tip of the central contact? Are these compatible with Canare's BNC receptacles?

A The central contact is pointed in conformance with the JIS standard for 50Ω BNC connectors. The central contacts on Canare's connectors conform to the MIL standard, and therefore are not pointed. These two different shapes simply offer different ways to guide the plug into the female receptacle and have no direct effect on contact quality.

The actual contact surfaces on Canare's BNC connectors are designed in conformance with JIS standards and therefore pose no compatibility problems.



Q Is it possible to use cables not listed in the connector compatibility table as long as they are close to the dimensions of those listed?

A No. While connection may be possible, performance may be adversely affected.

Even if the connection appears to work, factors such as electrical instability, weak cable contact strength and others may cause problems during actual use.

Therefore, it is necessary to test and evaluate whether it is actually possible to use the configuration in question. Particular caution should be used when crimping is involved.

Q What is meant by "cable contact strength"?

A Cable contact strength refers to the maximum load borne by the cable when exerting tensile force to remove it from the connector. For Canare products, "cable contact strength" refers to the contact strength of a cable's outer conductor, not including the pull-out strength of the central contact or the contact strength of the inner conductor.

Q What is the approximate insertion loss associated with connectors?

A The value varies depending on the connector, but for BNC plugs the value is approximately 0.1dB per plug (DC–2GHz).

Cables to Connector Cross-Reference

■ BNC, F, RCA, etc.

See page 35, for more information about the crimp height.

Model	BNC							F	RCA	Others	Suitable Die Set (*1)	Crimp Height
	Crimp Plug					Solder Plug	Jack					
	BCP-B	BCP-A	BCP-C	MBCP-C	BCP-LC	BCP-H		FP-C	RCAP-C			
L-1.5C2VS/V*-1.5C			BCP-C1				BCJ-FC1(-7/16) BCJ-RUC1				TCD-1DB	—
1.5C-2V												
L-2.5C2V		BCP-A25									TCD-35CA	1.40 - 1.47
L-2.5CFB		BCP-A25F		MBCP-C25F					RCAP-C25F			1.40 -1.50
1855A	BCP-B26											
L-2.5CHD/L-2.5CHLT	BCP-B25HD							FP-C25HD	RCAP-C25HD			
VDM230												
1855ENH	BCP-B28											
HD PRO 0.6/2.8 AF												
1506A		BCP-A32										
L-3C2V/L-3C2VS		BCP-A3			BCP-LC3	BCP-H3B BCP-H5/1		FP-C3	RCAP-C3A	MCM-V5C3 MCF-V5C3		
V3-3C/V4-3C		BCP-A3 BCP-VA3										
V5-3C										MCM-V5C3 MCF-V5C3		
L-3CFB/V*-3CFB	BCP-B3F	BCP-A3F		MBCP-C3F	BCP-LC3F			FP-C3F	RCAP-C3F			
1695A		BCP-A55						FP-C55A				
VSD2001TS												
L-3C2W		BCP-A31						FP-C31			TCD-31C	
L-3CFW/V*-3CFW	BCP-B31F					BCP-H31F					TCD-4CA or TCD-451CA	
LV-61S		BCP-A4		MBCP-C4			BCJ-C4	FP-C4	RCAP-C4A	VWP-C4A MVP-C4		
RG-59B/U												
L-4CFB/V*-4CFB	BCP-B4F	BCP-A4F		MBCP-C4F				FP-C4F	RCAP-C4F			
1505A, 1505ANH												
HD PRO 0.8/3.7 AF												
VPM2000												
L-4CHD												
1505F		BCP-A42							RCAP-C42		TCD-31C	
L-4.5CHD	BCP-B53							FP-C53A	RCAP-C53		TCD-35CA	
1694A												
HD PRO 1.0/4.8 AF	BCP-B56											
L-4.5CHWS	BCP-B45HW					BCP-H45HW						
L-5C2V/L-5C2VS		BCP-A5			BCP-LC5	BCP-H5B BCP-H5/1		FP-C5	RCAP-C5A			
V*-5C		BCP-A5 BCP-VA5										
LV-77S		BCP-A77							RCAP-C77		TCD-5CF or TCD-55FA excluding BCP-A5F (*2)	
L-5CFB/V*-5CFB	BCP-B5F	BCP-A5F (*2)		MBCP-C5F	BCP-LC5F	BCP-H5B BCP-H5/1 BCP-H51F		FP-C5F	RCAP-C5F			
L-5CFW/V*-5CFW	BCP-B51F					BCP-H51F						
8281F		BCP-A77							RCAP-C77			
L-5C2W		BCP-A52						FP-C52			TCD-451CA	
L-5CHD			BCP-C5HD								TCD-5HD	1.90 - 2.00
L-6CHD			BCP-C6HD								TCD-67HD	2.15 - 2.25
L-7CHD			BCP-C7HD									
L-7CFB			BCP-C7FA					FP-C7FA			TCD-7CA	1.90 -2.00
7731A			BCP-C71A									
9292								FP-C71A				
L-8CHD										NCP-H8HD	—	—
GS-6									RCAP-C3GS		TCD-35D	2.01 -2.20

*1: Die set is not required for BCP-H series and NCP-H8HD *2: Suitable die set for BCP-A5F is TCD-35CA

See page 32-33, for 50 ohm cables and connectors.

Belden: 1505A, 1505ANH, 1505F, 1506A, 1694A, 1695A, 1855A, 1855ENH, 7731A, 8281F, 9292
Gepco: VDM230, VPM2000, VSD2001, VSD2001TS
Draka: HD PRO 0.6/2.8 AF, HD PRO 0.8/3.7 AF, HD PRO 1.0/4.8 AF,

■ DIN 1.0/2.3

Model	DIN	Suitable Die Set	Crimp height
	DCP-C		
L-2.5CHD/L-2.5CHLT	DCP-C25HD	TCD-D253F	1.08 -1.16
1855A			
VDM230			
L-3CFB	DCP-C3F		
L-4CFB	DCP-C4F	TCD-D534F	1.25 - 1.33
1505A			
VPM2000			
L-4.5CHD	DCP-C53		
1694A			
VSD2001			

Note: Be sure to use the right combination of cable, connector and die set for proper connection

110Ω-75Ω Impedance Transformers

Passively convert AES/EBU digital audio signals from 110Ω/XLR3 output to a 75Ω BNC coaxial cable and then back again to a 110Ω/XLR3 input.

■ Adapter Type

Model	Description
BCJ-XJ-TRC	XLR3 (F) - BNC Jack
BCJ-XP-TRC	XLR3 (M) - BNC Jack
BCJ-XJ-A10TRC	XLR3 (F) - BNC Jack, 10dB Attenuation Pad

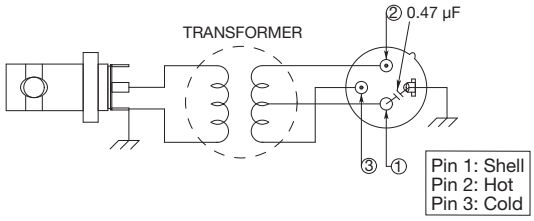
■ Panel Mount Type

Model	Description (Front - Back)	Flange Type
XJ3F-TRC-BCJ	XLR3 (F) - BNC Jack	ITT XLR-F77
XJ3M-TRC-BCJ	XLR3 (M) - BNC Jack	
BCJ-TRC-XP3F	BNC Jack - XLR (F)	
BCJ-TRC-XP3M	BNC Jack - XLR (M)	
XJ3F-A10TRC-BCJ	XLR3 (F) - BNC Jack, 10dB Attenuation Pad	
BCJ-A10TRC-XP3F	BNC Jack - XLR3 (F), 10dB Attenuation Pad	

- SMPTE 276M and AES3 transmission standards
- Coaxial transmission of 2 channel digital audio
- Allows longer cable runs than 110 ohm twisted pair
- AES/EBU signal distribution using Canare 75 ohm video patchbays

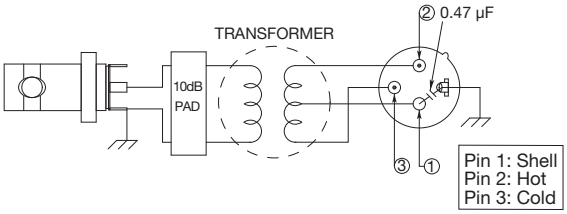
BCJ-XJ-TRC / BCJ-XP-TRC

75Ω BNC (unbalanced) 110Ω XLR3 (balanced)



BCJ-XJ-A10TRC

75Ω BNC (unbalanced) 110Ω XLR3 (balanced)



110Ω-75Ω Impedance Transfomer: Input/Output Level Performance

AES/EBU Transmitter (V)	Transformer Out (V)
2.0	1.60
3.0	2.39
4.0	3.18
4.5	3.60
5.0	3.98
6.0	4.78
7.0	5.58
8.0	6.38
9.0	7.18
10.0	7.98

BCJ-XJ-TRC/BCJ-XP-TRC

AES/EBU Transmitter (V)	Transformer Out -10dB Pad (V)
2.0	0.50
3.0	0.75
4.0	1.01
4.5	1.13
5.0	1.26
6.0	1.51
7.0	1.76
8.0	2.02
9.0	2.27
10.0	2.52

BCJ-XJ-A10TRC

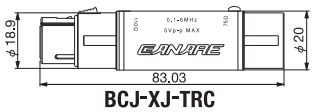
BCJ-XJ-TRC

BCJ-XP-TRC

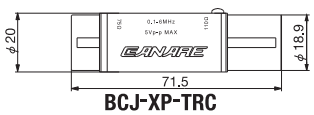
BCJ-XJ-A10TRC

XJ3F-TRC-BCJ

BCJ-TRC-XP3M

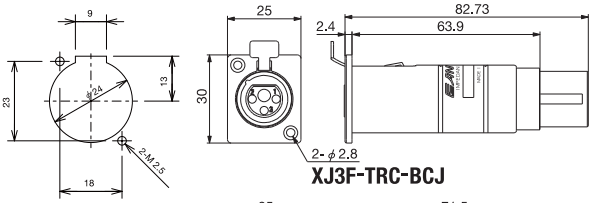


BCJ-XJ-TRC

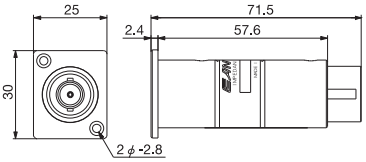


BCJ-XP-TRC

Panel Hole Dimensions



XJ3F-TRC-BCJ



BCJ-TRC-XP3M

Considerations When Configuring and Selecting Cables for Microphone Systems

With the growing demand of recent years for both greater physical comfort and savings in energy consumption, systems incorporating digital control based on the latest advances in electronics are coming into wider use for air conditioning and lighting systems. As all these systems come on line, we cannot help but be reminded of the fact that the wiring used for these digital control systems generates pulse-based electromagnetic noise of the kind that affects the very delicate signals used in microphone lines.

Microphone cables are designed to carry a range of signals that span the spectrum from 1/100 of a volt (10mV) to 1/1,000,000 (1µV). One small error in wiring procedure or cable selection and the entire microphone system turns into an antenna collecting the surrounding noise.

The following section uses a question and answer format to cover a list of the essential points for configuring microphone systems.

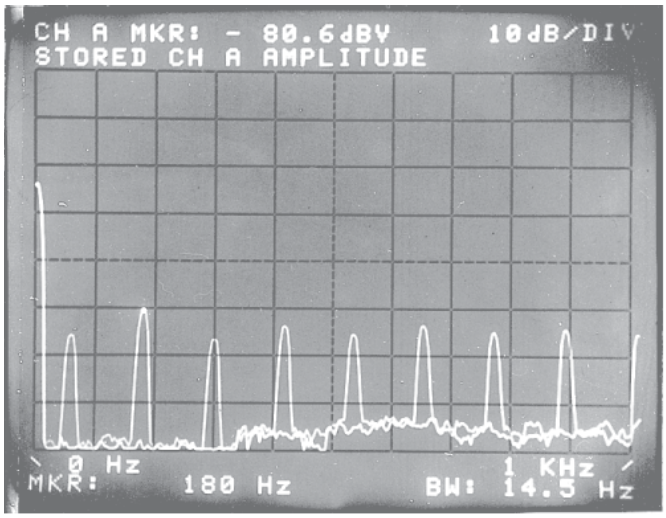


Fig. 1 Noise induced in star quad cable (Canare L-4E5AT)

Q1 Under what sort of conditions should a two-conductor microphone cable be used?

The two-conductor microphone cable is suited to environments where noise is not such a great factor and the audio signals are in the comparatively high -20dB to 0dB level range. In such cases, the two-conductor cable offers the advantages of smaller diameter and lower cost. Of course if microphone level, rather than line level, is the criterion being used, star quad cable should be used instead.

Q2 Under what conditions should star quad microphone cable be used?

This type is used for environments with a higher noise factor and where audio signals are in the low -50dB or less range. This type of cable performs well under noise conditions that exceed the capacity of the two-conductor shielded cable, effectively shielding out over ninety percent more noise. (See Figs. 1, 2)

However, should this type be routed alongside a power cable of any significant capacity it should probably be encased in metal conduit just to be safe.

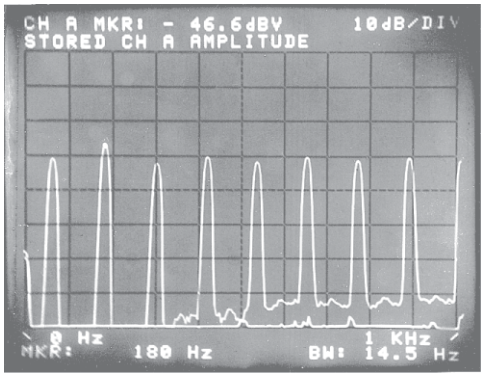


Fig. 2 Noise induced in two-conductor shielded cable (MVVS)

<Test conditions>
1. Flush along power cables for 20m distance
2. Power cable connected to lighting fixture dimmed to 50% capacity with load of 1kW.
3. The noise induced in the audio cable was boosted by 50dB in the head amplifier and viewed on a spectrum analyzer.

Q3 Isn't star quad cable expensive?

The cost for this type of cable has fallen significantly in recent years. Several decades ago, cost was so prohibitive a factor that only large musical auditoriums and broadcasting facilities could afford them. Canare succeeded in developing a low-cost star quad cable using aluminum foil in 1981. In addition to traditional professional facilities, this type gained wide use in such non-traditional areas as wedding halls and school lecture rooms.

Q4 When avoiding use of metal conduit, how far away should microphone cable be from power cables?

When foregoing the use of protective metal conduit, use the graph shown in Fig. 3 as a general guide for distancing cables. Note that ignoring basic guidelines for positioning cables can easily result in noise induction problems which are very difficult to deal with later. Encasing microphone cables in metal conduits is highly recommended for applications that utilize the delicate signal range.

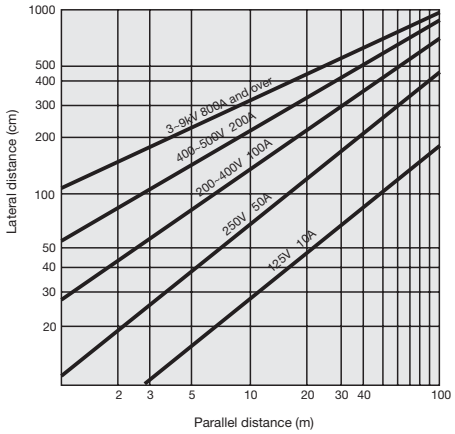


Fig. 3 Distances for positioning microphone and power cables

<Requisite conditions>
1. Cables are the star quad type.
2. Power cables are in the circular cab tire configuration.

Q5 What considerations are required when using a rack for strong electric current?

The same as for the preceding question when metal conduit is not used.

Q6 Would there be any problem with routing the cables through a flexible metal conduit?

The flexible conduit would certainly help to reduce noise but would not be as effective as a rigid metal conduit. Use the graph in Fig. 4 as a guide for distancing cables.

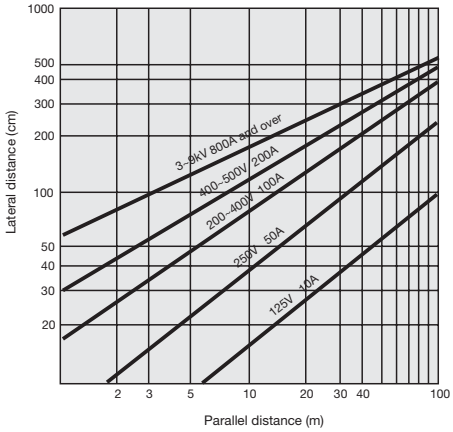


Fig. 4 Distances for positioning microphone and power cables when routing microphone cables via flexible metal conduit

<Requisite conditions>
1. Cables are the star quad type routed through flexible metal conduit.
2. Metal conduit is grounded using appropriate level of resistance.
3. Power cables are in the circular cab tire configuration.

Q7 What is a "corrugate" configuration?

The corrugate, shown in Photograph 1, is a configuration in which thin metal tape which serves as a shield is wound in a spiraled design around the cable. It is mainly used in underground cables. The shielding effect of the corrugate is midway between that of bare cable and cable routed through metal conduit. One drawback is its poor flexibility. Special care must be taken when bending this type of cable.

Photograph 1 Microphone cable with corrugate configuration

Q8 What are the criteria for choosing between the many different types of microphone cables?

As all are designed to provide electromagnetic shielding there is not that much basic difference in shielding performance. However, they do differ in various specific characteristics. Cable type should be selected according to specific requirements. (See Fig. 5)

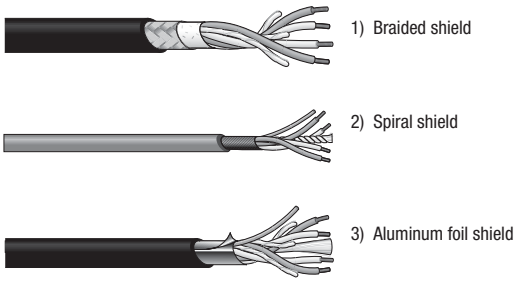


Fig. 5 Types of star quad microphone cables

• Braided Shield

The braided copper shield is designed to maintain effective shielding performance, regardless of how many times the cable is unwound, bent, twisted or rewound. It is ideal for use as handheld microphone cables or extension cables. This type is more expensive than other types as it is braided very finely to ensure a highly impenetrable shield. Cable termination requires seasoned expertise.

• Spiral Shield

The spiral shield consists of several copper wires wound tightly around the cable in a spiral wind. The shielding effect is heightened by winding the shield on twice, each time from different directions in what is referred to as the "double-spiral shield." The cost range for the spiral shield cable lies roughly mid way between the braided shield and the aluminum foil shield cable. Although cable termination operations are comparatively simple, the spiral shield tends to deteriorate when flexed too frequently. It is designed for stationary installation.

• Aluminum Foil Shield

The aluminum foil shield cable consists of aluminum foil fused onto a polyester film and wound around the cable in the form of a tape. Cable termination involves a simple operation and the cable is relatively inexpensive. The aluminum foil cable is recommended for use as stationary cabling.

Aluminum foil cable with a Kevlar cable filler is highly recommended for areas where cables will be routed through metal conduit. The Kevlar filler protects the cable as it passes through the conduit, preventing cable breakage or shorting, even when intense stress is applied to the cable. The aluminum foil cable is currently widely used in function halls and multipurpose track and field stadiums.

AWG is for Indicating conductor size

AWG is the abbreviation for American Wire Gauge. For solid center conductor, numbers are decided by conductor O.D. and for stranded center conductor, numbers are decided by conductor cross sectional area. The AWG numbers for conductors used at Canare are listed in Table 1.

AWG	Conductor cross sec. area (mm²)
13	2.81
14	2.18
15	1.75
16	1.27
18	1.0
20	0.51, 0.56

AWG	Conductor cross sec. area (mm²)
22	0.34, 0.37, 0.39
23	0.29, 0.30, 0.31
24	0.20, 0.22, 0.23
25	0.18
26	0.14, 0.15
28	0.08, 0.09
31	0.04

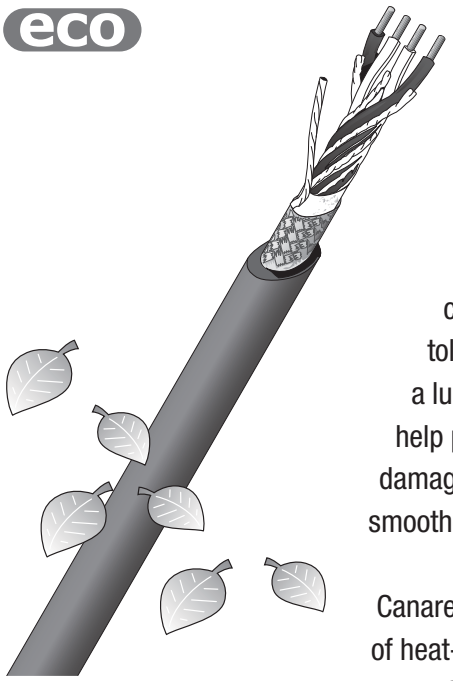
Table 1: AWG Numbers for Cables Used by Canare

Eco-Cables

■ Canare Eco-Cables (EM series)

"Eco-cable" should contain environmental friendly materials instead of normal materials. Standards for using the "eco-" label on low-voltage power cables, control cables, alarm signal cables, and communications cables were established in 1998 by the Japan Cable Makers' Association (JCS) at the request of the Japanese Ministry of Land, Infrastructure, and Transportation. Products meeting these standards may use the "Eco" or "ECO" (for ecological) designation, for example "EM (eco-material) cables". The JCS standards were designed on the premise of ensuring general-use performance equivalent to or better than conventional PVC cables.

Eco-cables will not emit toxic compounds like halogens (such as chlorine gas) or dioxins when incinerated, nor will they elute lead or other heavy metals into the soil when buried. Even if a fire should break out, they are formulated to do not emit poisonous gases, and they will give off less smoke than conventional materials. Also, unlike PVC, polyethylene coatings are not manufactured with plasticizers and thus require no special measures against out-gassing when used in "clean rooms" and other sensitive environments. Eco-cables often seem more rigid than conventional PVC cables, but their bending radius tolerances are the same. Applying a lubricant during installation will help protect the outer jacket from damaging frictions and allow for smoother threading.



Canare Eco-cables (EM series) consist of heat-resistant polyethylene which compliant with JCS standards, still remaining the same cable construction and electrical characteristics of conventional cables.

Type	Model	Color
Microphone	L-4E5AT-EM	Gray
	L-4E6AT-EM	
	L-4E5-EM	
	L-4E6-EM	
Mic (Multi)	★L-4E3-2AT-EM	Gray
	★L-4E3-4AT-EM	
	★L-4E3-8AT-EM	
	★L-4E3-12AT-EM	
	★L-4E3-16AT-EM	
	L-4E4-2AT-EM	
	L-4E4-4AT-EM	
	L-4E4-8AT-EM	
	L-4E4-12AT-EM	
	L-4E4-16AT-EM	
	★L-4E4-24AT-EM	
AES/EBU	DA206-EM	Gray

Type	Model	Color
Speaker	4S6-EM	Gray
	4S8-EM	
	★4S11-EM	
	4S10F-EM	
	4S12F-EM	
Coaxial	L-5CFB-EM	Black
Coaxial(Multi)	★V3-3C-EM	Black
	V5-3C-EM	
	★V3-5C-EM	
	V5-5C-EM	
	★V3-3CFB-EM	
	V5-3CFB-EM	
	★V3-5CFB-EM	
	V5-5CFB-EM	
DMX	DMX203-2P-EM	Black

★ Production by order. Please ask us for ordering lot.

Item		Characteristic	Testing Method
Smoke Producing Density		150 or less	JIS C 60695-6-31
Gas Producing at the Time of Combustion	Acidity	pH4.3 or greater	JIS C 3666-2
	Conductivity	10 μS/mm or less	
Flame Retardance		Flame must extinguish naturally within 60 sec.	JIS C 3005

The Star Quad Story

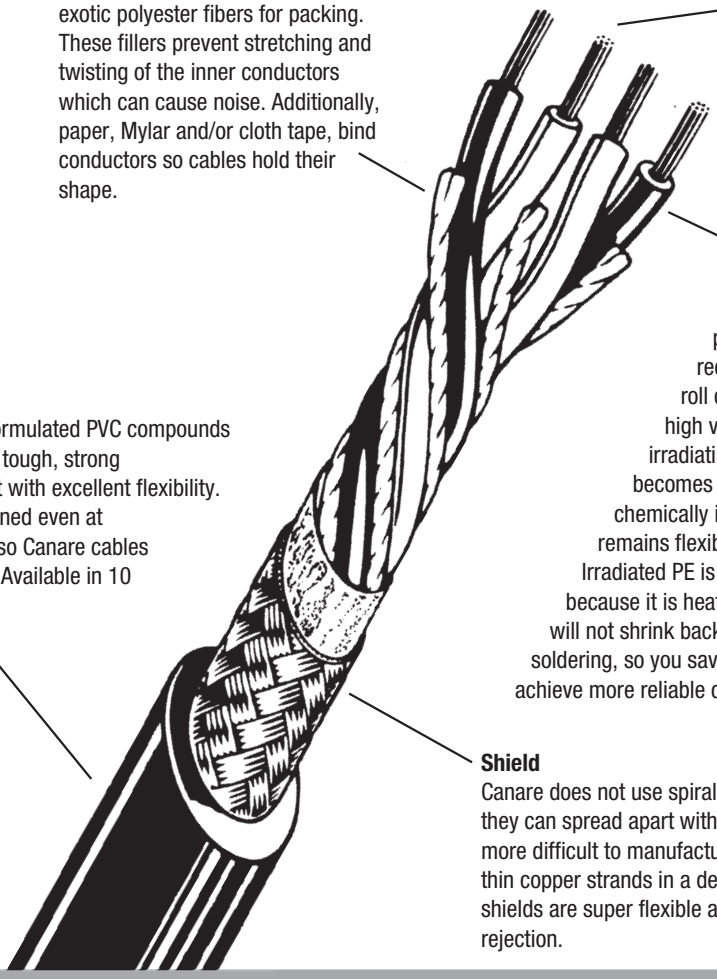
Canare Star Quad obtains its name from the 4-conductor style construction that minimizes the "loop area" between twists of the conductors. This "double balanced" pairing, reduces susceptibility to electromagnetically induced noise. The improvement in noise rejection is so noticeable, that even SCR dimmer noise (stage lighting consoles), is reduced to less than 1/10 the level found in other 2-conductor microphone cables.

Canare Star Quad is designed for use with microphones but is also excellent for all line-level signals (e.g. mixer to power amps). The 4-conductor Star Quad arrangement, cancels electromagnetically induced noise from SCR dimmer packs, fluorescent lighting ballasts and AC power transformers. Handling noise is prevented by use of cotton filler material. Excellent frequency response is maintained due to special irradiated polyethylene insulation which provides a low capacitance dielectric.

Canare Star Quad cable with braided shields is super flexible. We use large numbers of thin wire strands in the copper conductors and overall braided shield. We extrude a special compound PVC outer jacket that remains pliant at extremely low temperatures with no wait between cold shipping and installation.

Filler
Canare selects cotton, jute and /or exotic polyester fibers for packing. These fillers prevent stretching and twisting of the inner conductors which can cause noise. Additionally, paper, Mylar and/or cloth tape, bind conductors so cables hold their shape.

Conductors
All Canare microphone cables utilize highconductivity, annealed copper wires, stranded to form flexible conductors and shields.

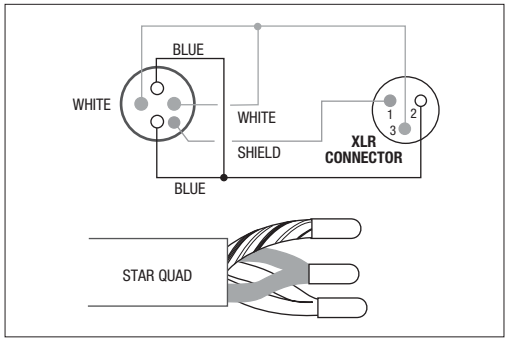


Insulation
Canare cables utilize special polymer compounds that reduce capacitive "R-C" filter roll off within the cable and prevent high voltage breakdown. By irradiating the material, the polymer becomes extensively cross-linked, chemically inert, water resistant, and remains flexible at very low temperatures. Irradiated PE is superior to ordinary polyethylene because it is heat resistant. Canare insulation will not shrink back, flow or char when soldering, so you save initial and rework time, and achieve more reliable connections.

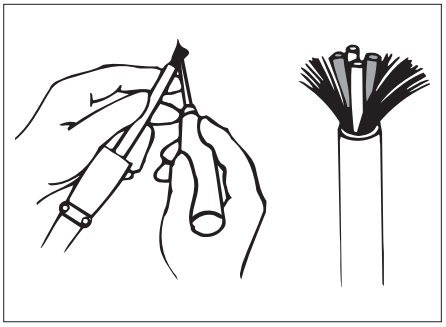
Jacket
Canare uses specially formulated PVC compounds that combine to make a tough, strong and durable outer jacket with excellent flexibility. These qualities are retained even at very low temperatures, so Canare cables will not stiffen or crack. Available in 10 attractive colors.

Shield
Canare does not use spiral (serve) shields because they can spread apart with use. Our shields are more difficult to manufacture because we use many thin copper strands in a densely woven braid. The shields are super flexible and offer outstanding noise rejection.

In order to maximize noise rejection, Star Quad must be properly wired to the XLR-3 connector (or terminal block).



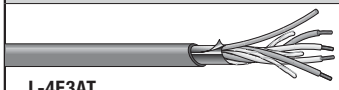
Because the shield density on Canare Cable is very high, it is somewhat difficult to push back the braid and pull the inner conductors through. Instead, we strongly recommend unbraiding the shield by "combing" it out with a pointed tool, beginning at the end of the cable.



Star Quad Microphone Cables (Single)

Effectively reduce noise levels to 1/10 that of general-purpose, 2-conductor shielded cables.

■ Aluminum Foil Shield

Type		Model	Sales units	Nom. O.D	Weight	Composition			Electrical characteristics			
						No. of cond.	Cross sec area (AWG) and cond. comp.	Twist pitch	Cond. D.C.R.	Shield D.C.R.	Nom. cap.*	Nom. cap.**
			m	mm	kg/100m		mm²/(AWG) Q'ty/mm	mm	Ω/100m	Ω/100m	pF/m	pF/m
 **L-4E3AT** Jacket color: gray	★	**L-4E3AT**	—	3.0	1.2	4	0.08(28) 7/0.12A	16	24.6	—	—	—
 **L-4E5AT** Jacket colors L-4E5AT, L-4E6AT: gray, black		**L-4E5AT**	100 200 400	5.0	3.3	4	0.18(25) 16/0.12A	21	10.7	—	164	222
		L-4E6AT		6.2	5.0	4	0.31(23) 12/0.18A	25	6.4	—	150	210
 **L-4E5ATG** Jacket color: gray	★	**L-4E5ATG**	—	5.0	3.3	4	0.18(25) 1/0.18(OFC)+30/0.08(OFC)	21	11.0	—	164	222
	★	**L-4E6ATG**		5.8	4.6	4	0.34(22) 1/0.18(OFC)+63/0.08(OFC)	35	5.5	—	150	210

Insulation: Cross-linked PE (blue-blue, white-white) Jacket: PVC Dielectric strength: 500V AC/min. *Capacitance between conductors **Capacitance between conductor and shield.

★Production by order. Please ask us for ordering lot.

L-4E3AT

- Designed for internal cabling connections on racks.

L-4E5AT, L-4E6AT

- The Kevlar* cable filler prevents damage due to excess stretching and stress that may occur when pulling the cable through conduits. <Fig. 1>
- Internal drain wire eliminates the troublesome part of line termination work.
- Aluminum foil shield blocks out electromagnetic noise.
- The microphone cable of choice for music auditorium and studio facilities where noise prevention and audio quality come first.

* Kevlar is the registered trademark of Dupont Corporation.

L-4E5ATG, L-4E6ATG

- The G versions feature oxygen-free copper (OFC, JIS H3510) conductors.

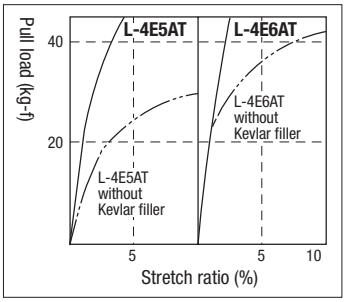


Fig.1 Cable Pull Load and Stretch Ratio

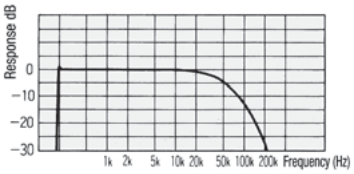


Fig. 2 Frequency Characteristics for L-4E5AT (100m)

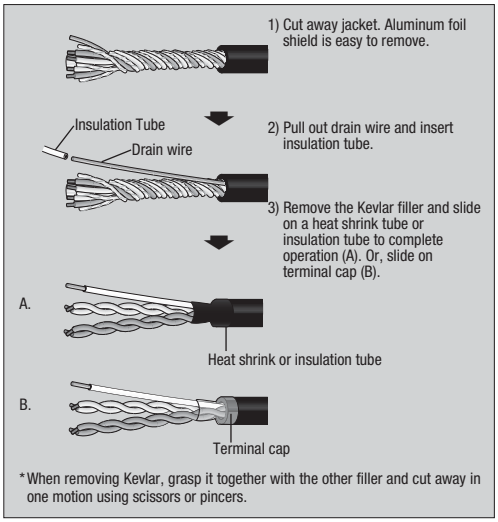
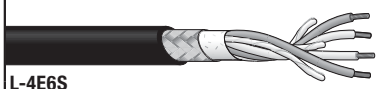


Fig. 3 Terminating L-4E5AT and L-4E6AT

■ Braided Shield

Type		Model	Sales units	Nom. O.D	Weight	Composition				Electrical characteristics			
						No. of cond.	Cross sec area (AWG) and cond. comp.	Twist pitch	Shield Coverage (Braid*)	Cond. D.C.R.	Shield D.C.R.	Nom. cap.*	Nom. cap.**
			m	mm	kg/100m		mm²/(AWG) Q'ty/mm	mm	%	Ω/100m	Ω/100m	pF/m	pF/m
 **L-4E5** Jacket colors L-4E5: gray, black L-4E6: gray		**L-4E5**	100 200	4.8	3.5	4	0.15(26) 30/0.08A	18	96%	13.0	1.9	162	200
		L-4E6	100 200 400	6.5	6.1	4	0.23(24) 20/0.12A	25	96%	8.6	1.6	144	187
 **L-4E6S** Jacket colors L-4E6S: brown, red, orange, yellow, green, blue, purple, gray, white, black L-4E5C: red, orange, yellow, green, blue, gray, black		**L-4E5C**	100 200	4.8	3.4	4	0.15(26) 30/0.08A	18	96%	13.0	2.4	162	200
		L-4E6S		6.0	4.8	4	0.20(24) 40/0.08A	20	94%	9.8	3.0	150	185

Insulation: Cross-linked PE (blue-blue, white-white) Jacket: PVC Dielectric strength: 500V AC/min. *Capacitance between conductors. **Capacitance between conductor and shield.

L-4E5, L-4E6

- Ideal for interconnecting various devices.
- Internal drain wire eliminates the troublesome part of line termination work.

L-4E5C, L-4E6S

- Bend resistant design makes this ideal for the stage and for press conference type applications.
- Braid coverage of 94% or over provides intense shielding that blocks out electromagnetic noise.
- L-4E6S conductor consists of 40 ultra-fine 0.08mm strands (30 for L-4E5C) in a stranded format that offers excellent durability.

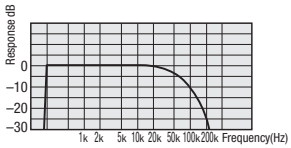
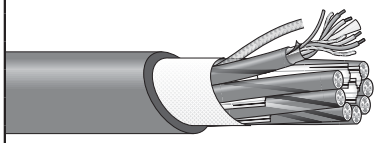


Fig. 4 Frequency Characteristics for L-4E6S (100m)

Star Quad Multichannel Microphone Cables

■ Aluminum Foil Shield

Type		Model	No. of ch.	Sales units	Nom. O.D	Weight	No. of cond.	Unit composition			Electrical characteristics			
								Cross sec area (AWG) and cond. comp.	Twist pitch	Ch. O. D.	Cond. D.C.R.	Shield D.C.R.	Nom. cap.*	Nom. cap.**
				m	mm	kg/100m		mm²/(AWG) Q'ty/mm	mm	mm	Ω/100m	Ω/100m	pF/m	pF/m
 L-4E4-8AT Jacket color: gray	★	L-4E3-2AT	2	—	8.5	7.5	8	4E3AT Unit 0.08(28) 7/0.12A	16	3.0	24.8	—	—	—
	★	L-4E3-4AT	4		10.0	11	16							
	★	L-4E3-8AT	8		13.8	19	32							
	★	L-4E3-12AT	12		15.6	26	48							
	★	L-4E3-16AT	16		17.2	32	64							
	★	L-4E3-24AT	24		21.3	47	96							
		L-4E4-2AT	2	100 200 500	10.5	12	8	4E4AT Unit 0.18(25) 16/0.12A	21	3.7	10.8	—	164	222
		L-4E4-4AT	4		12.3	17	16							
		L-4E4-8AT	8		16.9	31	32							
		L-4E4-12AT	12		18.9	41	48							
		L-4E4-16AT	16		20.9	50	64							
		L-4E4-24AT	24		26.1	76	96							

Insulation: Cross-linked PE (blue-blue, white-white) Jacket, inner Jacket: PVC Dielectric strength: 500V AC/min. *Capacitance between conductors **Capacitance between conductor and shield.
★Production by order. Please ask us for ordering lot.

L-4E3-**AT, L-4E4-**AT

- The multichannel microphone cable is the cable of choice for music auditorium and studio facilities where noise prevention and audio quality are the prime considerations.
- Each unit contains the highly pull-resistant Kevlar cable filler.

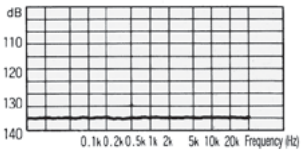
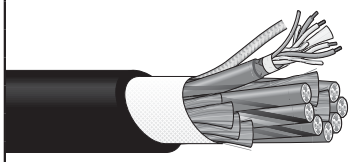


Fig. 1 Crosstalk Characteristics for L-4E4-4AT (100m)

■ Braided Shield

Type		Model	No. of ch.	Sales units	Nom. O.D	Weight	No. of cond.	Unit composition				Electrical characteristics			
								Cross sec area (AWG) and cond. comp.	Twist pitch	Shield coverage (braid)	Ch. O. D.	Cond. D.C.R.	Shield D.C.R.	Nom. cap.*	Nom. cap.**
				m	mm	kg/100m		mm²/(AWG) Q'ty/mm	mm	%	mm	Ω/100m	Ω/100m	pF/m	pF/m
 L-4E3-8P Jacket color: black (L-4E3-2H gray)	★	L-4E3-2H	2	—	8.9	9.5	8	0.08(28) 7/0.12A	16	93%	3.4	24.9	3.4	145	170
		L-4E3-2P	2	100 200 500	8.9	8.2	8								
		L-4E3-4P	4		10.9	14	16								
		L-4E3-8P	8		15.3	26	32								
		L-4E3-12P	12		17.4	36	48								
		L-4E3-16P	16		18.9	43	64								
		L-4E3-24P	24		24.0	70	96								
		L-4E4-2P	2		11.1	13	8	0.15(26) 30/0.08A	16	95%	4.0	13.1	2.4	162	200
		L-4E4-4P	4		13.4	21	16								
	★	L-4E4-8P	8		18.2	37	32								

Insulation: Cross-linked PE (blue-blue, white-white) Jacket, inner jacket: PVC Dielectric strength: 500V AC/min. *Capacitance between conductors **Capacitance between conductor and shield.
★Production by order. Please ask us for ordering lot.

L-4E3-2H, L-4E3-**P, L-4E4-**P

- Ideal multichannel cable for PA and live events where cables are laid down and taken back up on a regular basis.
- Each unit of L-4E3-*P and L-4E3-2H contains the highly pull-resistant Kevlar cable filler.
- The L-4E3-2H is the reinforced version containing a stainless steel wire support.

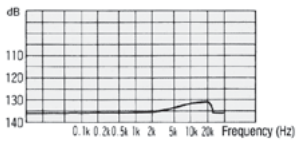
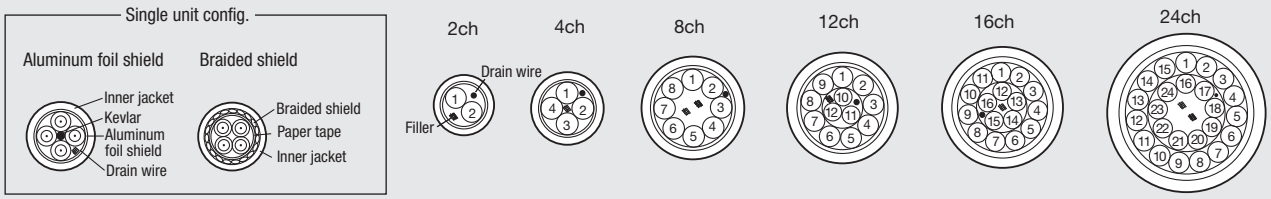


Fig. 1 Crosstalk Characteristics for L-4E4-4P (100m)

■ Cross-sectional View

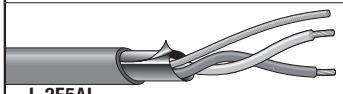


■ Channel color code: Spiral marks on inner jacket (gray).

Unit no.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Spiral mark	RED	BLU	YEL	GRN	BRN	-	BLU/ BLK	YEL/ BLK	GRN/ BLK	BRN/ BLK	BLK	BLU/ ORN	YEL/ ORN	GRN/ ORN	BRN/ ORN	ORN	BLU/ PNK	YEL/ PNK	GRN/ PNK	BRN/ PNK	PNK	BLU/ WHT	YEL/ WHT	GRN/ WHT

Two-Conductor Shielded Cables (Single)

■ Aluminum Foil Shield

Type	Model	Sales units	Composition					Electrical characteristics			
			Nom. O.D	Weight	No. of cond.	Cross sec area (AWG) and cond. comp.	Twist pitch	Cond. D.C.R.	Shield D.C.R.	Nom. cap.*	Nom. cap.**
		m	mm	kg/100m		mm²/(AWG) Q'ty/mm	mm	Ω/100m	Ω/100m	pF/m	pF/m
 **L-2B2AT** Jacket colors: gray, black	**L-2B2AT**	200 500	3.2	1.3	2	0.18(25) 16/0.12A	25	10.5	—	73	120
 **L-2B2AL** Jacket color: gray	**L-2B2AL**	200	3.2	1.2	2	0.18(25) 7/0.18TA Overall tin coated	20	11.3	—	—	—
 **L-2E5AT** Jacket colors: gray, black, sepia	**L-2E5AT**		5.0	3.3	2	0.31(23) 12/0.18A	30	6.2	—	79	140
 **L-2E5AL** Jacket color: gray	**L-2E5AL**	200 500	5.0	3.3	2	0.29(23) 7/0.23TA Overall tin coated	30	6.8	—	—	—

Insulation: Cross-linked PE (polyethylene for L-2E5AL and L-2B2AL) Jacket: PVC Dielectric strength: 500V AC/min. *Capacitance between conductors **Capacitance between conductor and shield.

L-2B2AT, L-2E5AT

- Ideal for internal rack wiring.
- Internal drain wire eliminates the troublesome part of line termination work.
- The L-2E5AT contains the Tetoron cable filler reinforcement material. <Fig. 1>

L-2B2AL, L-2E5AL

- Cables for connecting devices with which wrapping tools can be used.
- Internal drain wire eliminates the troublesome part of line termination work.

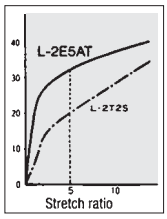


Fig. 1 Pull Load and Stretch Ratio for Cable

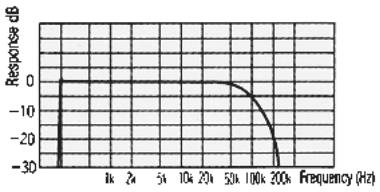
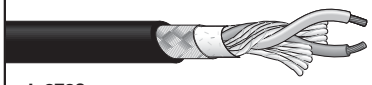


Fig. 2 Frequency Characteristics for L-2B2AT (100m)

■ Braided Shield

Type	Model	Sales units	Composition						Electrical characteristics			
			Nom. O.D	Weight	No. of cond.	Cross sec area (AWG) and cond. comp.	Twist pitch	Shield coverage (braid)	Cond. D.C.R.	Shield D.C.R.	Nom. cap.*	Nom. cap.**
		m	mm	kg/100m		mm²/(AWG) Q'ty/mm	mm	%	Ω/100m	Ω/100m	pF/m	pF/m
 **L-2T2S** Jacket colors for L-2T2S: red, orange, yellow, blue, gray, black for L-2E5: black	**L-2T2S**	100 200	6.0	4.6	2	0.30(23) 60/0.08A	20	94%	6.4	3.1	70	106
	L-2E5	200	4.6	3.0	2	0.15(26) 30/0.08A	18	97%	12.7	2.2	—	—

Insulation: Cross-linked PE Jacket: PVC Dielectric strength: 500V AC/min. *Capacitance between conductors **Capacitance between conductor and shield.
★Production by order. Please ask us for ordering lot.

L-2T2S, L-2E5

- Braid coverage of 94% and above provides dense shielding that blocks out electromagnetic noise.
- L-2T2S consists of 60 ultra-fine 0.08mm strands (30 for L-2E5) in a stranded format that offers excellent durability.
- Highly pliable and durable PVC used for jacket. (Brittle temp. -49°C)

■ Spiral Shield

Type	Model	Sales units	Composition						Electrical characteristics			
			Nom. O.D	Weight	No. of cond.	Cross sec area (AWG) and cond. comp.	Twist pitch	Shield coverage	Cond. D.C.R.	Shield D.C.R.	Nom. cap.*	Nom. cap.**
		m	mm	kg/100m		mm²/(AWG) Q'ty/mm	mm	%	Ω/100m	Ω/100m	pF/m	pF/m
 **MS203** Jacket color: gray	**MS203**	200	3.5	2.1	2	0.31(23) 12/0.18TA	30	91% (spiral)	6.5	2.3	—	—

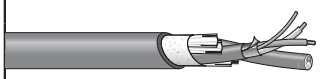
Insulation: Cross-linked PE Jacket: PVC Dielectric strength: 500V AC/min. *Capacitance between conductors **Capacitance between conductor and shield.

MS203

- Ideal for internal rack wiring.
- Equivalent product for the 3B2 and 3L2.

Two-Conductor Shielded Multichannel Cables

■ Aluminum Foil Shield

Type	Model	No. of ch.	Sales units	Nom. O.D	Weight	No. of cond.	Unit composition			Electrical characteristics			
							Cross sec area (AWG) and cond. comp.	Twist pitch	Ch. O. D.	Cond. D.C.R.	Shield D.C.R.	Nom. cap.*	Nom. cap.**
			m	mm	kg/100m		mm²/(AWG) Q'ty/mm	mm	mm	Ω/100m	Ω/100m	pF/m	pF/m
	L-2E4-2AL	2	100 200 500	8.6	7.6	4	0.29(23) 7/0.23TA Overall tin coated	30	3.7	6.9	—	81	144
	L-2E4-4AL	4		10.8	13	8							
	L-2E4-8AL	8		14.9	24	16							
	L-2E4-12AL	12		16.9	32	24							
L-2E4-2AL Jacket color : gray ★	L-2E4-16AL	16		18.8	40	32							

Insulation: Cross-linked PE Jacket: PVC Dielectric strength: 500V AC/min.

*Capacitance between conductors **Capacitance between conductor and shield.

★Production by order. Please ask us for ordering lot.

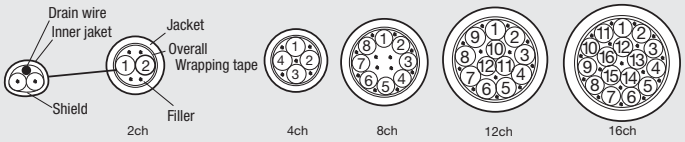
L-2E4-AL Series

- Used as cables for connecting devices with which wrapping tools can be used.
- Internal drain wire eliminates the troublesome part of line termination work.

No.	Dot line markings
1	– –
2	– – – –
3	– – – – – –
4	– – – – – – – –
5	– – – – – – – – – – – – – – – –
6	—— ——
7	—— —— —— ——
8	—— —— —— —— —— ——
9	—— —— —— —— —— —— —— ——
0	—— —— —— —— —— —— —— —— —— ——

■ Cross-sectional View

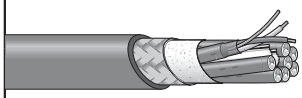
Single unit config.



■ Channel color code: color-coded insulation and dot line makings (ch 1 to 10: red, ch 11 to 16: blue) on inner jacket (gray).

Unit no.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Insulation color	RED/ WHT	BLU/ WHT	YEL/ WHT	GRN/ WHT	BRN/ WHT	GRY/ WHT	BLU/ BLK	YEL/ BLK	GRN/ BLK	BRN/ BLK	GRY/ BLK	BLU/ ORN	YEL/ ORN	GRN/ ORN	BRN/ ORN	GRY/ ORN

■ Spiral Shield

Type	Model	No. of ch.	Sales units	Nom. O.D	Weight	No. of cond.	Unit composition				Electrical characteristics			
							Cross sec area (AWG) and cond. comp.	Twist pitch	Shield coverage	Ch. O. D.	Cond. D.C.R.	Shield D.C.R.	Nom. cap.*	Nom. cap.**
			m	mm	kg/100m		mm²/(AWG) Q'ty/mm	mm	%	mm	Ω/100m	Ω/100m	pF/m	pF/m
 ★	MS203-2BS	2	—	8.9	11	4	0.31(23) 12/0.18TA	30	91% (spiral shield)	3.5	6.6	2.3	—	—
★	MS203-4BS	4		10.3	16	8								
MS203-8BS Jacket color: gray ★	MS203-8BS	8		13.5	27	16								

Insulation: Cross-linked PE(orenge, white) Jacket: PVC Dielectric strength: 500V AC/min.

*Capacitance between conductors **Capacitance between conductor and shield.

★Production by order. Please ask us for ordering lot.

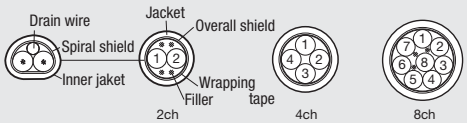
MS203-BS Series

- Multichannel version of MS203. (See page 44)
- Overall braided shield enables robust shielding performance.

No.	Dot line markings
1	– –
2	– – – –
3	– – – – – –
4	– – – – – – – –
5	– – – – – – – – – – – – – – – –
6	—— ——
7	—— —— —— ——
8	—— —— —— —— —— ——
9	—— —— —— —— —— —— —— ——
0	—— —— —— —— —— —— —— —— —— ——

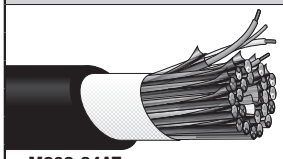
■ Cross-sectional View

Single unit config.



■ Unit ID: by dot line markings

■ Aluminum Foil Shield

Type	Model	No. of ch.	Sales units	Nom. O.D	Weight	No. of cond.	Unit composition			Electrical characteristics			
							Cross sec area (AWG) and cond. comp.	Twist pitch	Ch. O. D.	Cond. D.C.R.	Shield D.C.R.	Nom. cap.*	Nom. cap.**
			m	mm	kg/100m		mm²/(AWG) Q'ty/mm	mm	mm	Ω/100m	Ω/100m	pF/m	pF/m
 **M202-24AT** Jacket color: black	**M202-2AT**	2	100 200 500	6.5	4.6	4	0.18(25) 16/0.12A	30	—	10.5	—	75	135
	M202-4AT	4		8.1	7.5	8							
	M202-8AT	8		11.1	13	16							
	M202-12AT	12		12.5	18	24							
	M202-16AT	16		13.8	22	32							
	M202-24AT	24		17.0	32	48							
	M202-32AT	32		18.6	40	64							
 **MR202-24AT** Jacket color: black	**MR202-2AT**	2	100 200 500	6.7	4.5	4	0.18(25) 7/0.18A	25	2.7	10.7	—	76	142
	MR202-4AT	4		7.6	6.2	8							
	MR202-8AT	8		11.0	13	16							
	MR202-12AT	12		12.7	19	24							
	MR202-16AT	16		14.0	23	32							
	MR202-24AT	24		17.4	34	48							
	MR202-32AT	32		19.1	44	64							

Insulation: Cross-linked PE Jacket: PVC Dielectric strength: 500V AC/min. *Capacitance between conductors **Capacitance between conductor and shield.

M202-AT Series

- Multichannel cable featuring light weight and slim form. At only 16kg for a 50m length of 24 channel cable, the M202-AT achieves a 47% weight reduction over previous Canare cables.
- Each channel is individually isolated using insulated (PET) aluminum foil shield. <Fig. 1>

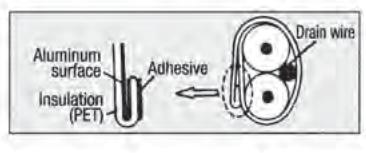
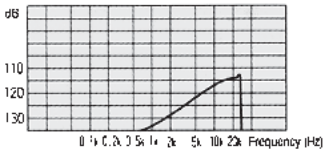


Fig. 1 Aluminum Foil Shield

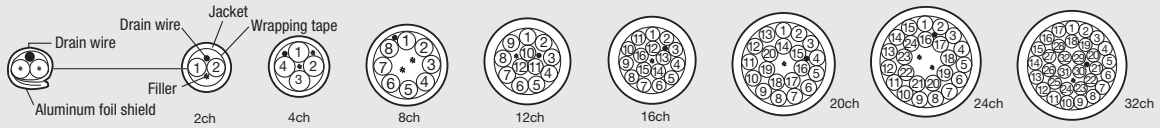


Crosstalk Characteristics for M202-24AT (100m)

Note:
This series does not have inner jacket, so it can not be used for fantails.

■ Cross-sectional View

Single unit config.



■ Channel color code:

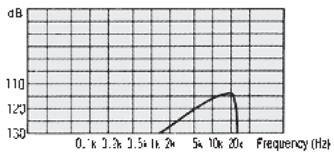
Unit no.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Insulation color	RED/ WHT	BLU/ WHT	YEL/ WHT	GRN/ WHT	BRN/ WHT	GRY/ WHT	BLU/ BLK	YEL/ BLK	GRN/ BLK	BRN/ BLK	GRY/ BLK	BLU/ ORN	YEL/ ORN	GRN/ ORN	BRN/ ORN	GRY/ ORN	BLU/ PNK	YEL/ PNK	GRN/ PNK	BRN/ PNK	GRY/ PNK	BLU/ RED	YEL/ RED	GRN/ RED	BRN/ RED	GRY/ RED	YEL/ BLU	GRN/ BLU	BRN/ BLU	GRN/ YEL	BRN/ YEL	GRY/ YEL

MR202-AT Series

Multichannel cable for studio applications.
Ideal for pit (duct) wiring and for interconnecting devices in studios.

- Color coding for channels conforms to international standards pertaining to color coding for resistors.
- Internal drain wire eliminates the troublesome part of line termination work.
- Outer diameter is a very slim 17.4mm, even with 24 channels.

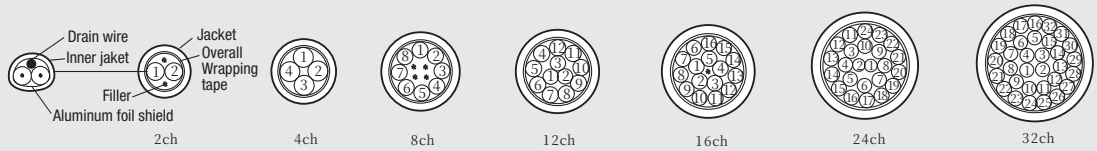
Note:
The MR202-AT Series cables are not geared to conduit or field use applications in which cables are subject to strong pulling action.



Crosstalk Characteristics for MR202-24AT (100m)

■ Cross-sectional View

Single unit config.



■ Channel color code: Inner jacket color coding and spiral markings,.* Insulation inside units: one is clear and the other bears the same color as the spiral markings.

Unit no.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Insulation color	BRN	RED	ORN	YEL	GRN	BLU	PPL	GRY	WHT	BLK	BRN	RED	ORN	YEL	GRN	BLU	PPL	GRY	WHT	BLK	BRN	RED	ORN	YEL	GRN	BLU	PPL	GRY	WHT	BLK	BRN	RED
Spiral markings	BRN	RED	ORN	YEL	GRN	BLU	PPL	GRY	WHT	BLK	–	RED	ORN	YEL	GRN	BLU	PPL	GRY	WHT	BLK	BRN	–	ORN	YEL	GRN	BLU	PPL	GRY	WHT	BLK	BRN	RED
Inner jacket color	BLK									BRN										RED										ORN		

Speaker Cables (Single)

Four-conductor configuration minimizes noise and polyethylene insulation reduces induction rate to boost frequency characteristics

■ 4-conductor Speaker Cable

Type		Model	Pair cross-sec	Sales units	Nom. O.D	Weight	Composition				Electrical characteristics	
							No. of cond.	Cross sec area (AWG)	Cond. comp Q'ty/mm	Twist pitch	Cond. D.C.R.	Nom. capacitance*
			mm²	m	mm	kg/100m		mm²/(AWG)		mm	Ω/100m	pF/m
 4S8		4S6	1.0	100 200 400	6.4	5.4	4	0.51(20)	20/0.18A	45	3.7	125
		4S8	2.5		8.3	9.5	4	1.27(16)	50/0.18A	70	1.5	145
		4S11	4.3		10.7	16	4	2.18(14)	41/0.26A	100	0.9	146
	★	4S6G	1.0	—	6.4	5.4	4	0.51(20)	20/0.18(OFC)	45	3.7	125
Jacket color for 4S6: gray, black, red, blue, cream for 4S8, 4S6G: gray, black for 4S8G, 4S11, 4S11G: gray	★	4S8G	2.5		8.3	9.5	4	1.27(16)	50/0.18(OFC)	70	1.5	145
	★	4S11G	4.3		10.7	16	4	2.18(14)	41/0.26(OFC)	100	0.9	146

Insulation: polyethylene (red, translucent red, white, translucent white) Jacket: PVC Dielectric strength: 500V AC/min.

*Capacitance between conductors.
★Production by order. Please ask us for ordering lot.

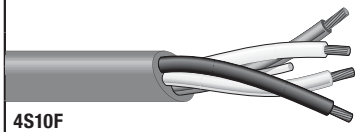
4S6, 4S8, 4S11

- High-performance PVC jacket, resistant to bending and twisting.
- 4S6 designed to fit snugly with Cannon XLR.

4S6G, 4S8G, 4S11G

- The G versions feature oxygen-free copper (OFC, JIS H3510) conductors.

■ 4-conductor Speaker Cable for Fixed Installation

Type		Model	Pair cross-sec	Sales units	Nom. O.D	Weight	Composition				Electrical characteristics	
							No. of cond.	Cross sec area (AWG)	Cond. comp Q'ty/mm	Twist pitch	Cond. D.C.R.	Nom. capacitance*
			mm²	m	mm	kg/100m		mm²/(AWG)		mm	Ω/100m	pF/m
 4S10F		4S10F	3.5	100 200 400 1000	9.6	15	4	1.75(15)	33/0.26A	100	1.1	144
		4S12F	5.6		11.6	22	4	2.81(13)	35/0.32A	120	0.7	152
	★	4S14F	8.0	—	14.0	32	4	4.0(12)	50/0.32A	120	0.5	—
	★	4S18F	14.2		17.5	53	4	7.08(9)	88/0.32A	150	0.3	—
	★	4S10FG	3.5		9.6	15	4	1.75(15)	33/0.26(OFC)	100	1.1	144
Jacket color: gray	★	4S12FG	5.6		11.6	22	4	2.8(13)	35/0.32(OFC)	120	0.7	152

Insulation: polyethylene (red, translucent red, white, translucent white) Jacket: PVC Dielectric strength: 500V AC/min.

*Capacitance between conductors.
★Production by order. Please ask us for ordering lot.

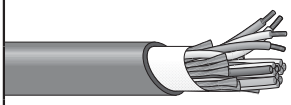
4S10F, 4S12F, 4S14F, 4S18F

- Special supple jacket designed for use in building conduits.

4S10FG, 4S12FG

- The G versions feature oxygen-free copper (OFC, JIS H3510) conductors.

Multichannel Speaker Cables

Type		Model	Pair cross-sec	Sales units	Nom. O.D	Weight	Unit composition				Electrical characteristics	
							No. of cond.	Cross sec area (AWG) and cond. comp.	Twist pitch	Ch. O. D.	Cond. D.C.R.	Nom. cap.*
			mm²	m	mm	kg/100m		mm²/(AWG) Q'ty/mm	mm	mm	Ω/100m	pF/m
 S410-4P Jacket color: gray		S410-4P	2.0	100 200 500	15.0	26	16	1.0(18) 127/0.10(OFC)	50	5.1	1.9	165
	★	S410-6P	2.0	—	18.3	39	24					
	★	S410-8P	2.0		21.6	53	32					

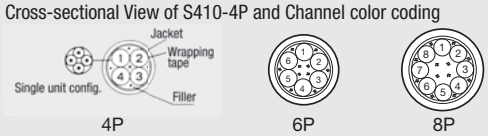
Insulation: Polyethylene Jacket: PVC Dielectric strength: 500V AC/min.

*Capacitance between conductors. ★Production by order. Please ask us for ordering lot.

S410-P Series

- Low rate of crosstalk between channels is ideal for commercial, multi-way speakers systems. <Fig 1>
- Conductors feature oxygen-free copper. (OFC, JIS H3510).

■ Cross-sectional View of S410-4P and Channel color coding



Unit no.	1	2	3	4	5	6	7	8
Insulation color	RED/WHT/ RED/WHT	BLU/WHT/ BLU/WHT	YEL/WHT/ YEL/WHT	GRN/WHT/ GRN/WHT	BRN/WHE/ BRN/WHT	GRY/WHT/ GRY/WHT	BLU/BLK/ BLU/BLK	YEL/BLK/ YEL/BLK

When connecting, 2 channels (red, red) can be designated positive and 2 channels (white, white) can be negative.

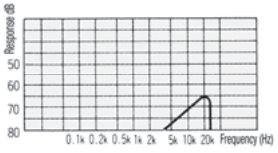
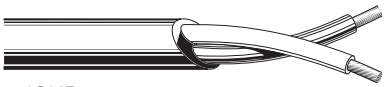


Fig. 1 Crosstalk Characteristics for S410-4P

Speaker Cables (Single)

■ 2-conductor Speaker Cable for Fixed Installation

Type		Model	Sales units	Nom. O.D	Weight	Composition			Electrical characteristics	
						No. of cond.	Cross sec area(AWG) Cond. comp.	Twist pitch	Cond. D.C.R.	Nom. capacitance*
			m	mm	kg/100m		mm²/(AWG) Q'ty/mm	mm	Ω/100m	pF/m
	★	2S7F	—	6.8	5.2	2	1.27(16) 50/0.18A	50	1.5	—
	★	2S9F		8.9	8.7	2	2.18(14) 41/0.26A	60	0.9	—
	★	2S11F		11.1	14	2	3.62(12) 45/0.32A	80	0.5	—
	★	2S14F		13.8	21	2	5.63(10) 70/0.32A	90	0.3	—
	★	2S7FG	—	6.8	5.2	2	1.27(16) 50/0.18(OFC)	50	1.5	—
	★	2S9FG		8.9	8.7	2	2.18(14) 41/0.26(OFC)	60	0.9	—
	★	2S11FG		11.1	14	2	3.62(12) 45/0.32(OFC)	80	0.5	—
Jacket color: gray, black	★	2S14FG		13.8	21	2	5.63(10) 70/0.32(OFC)	90	0.3	—



2S14F

Insulation: polyethylene (orange, white) Jacket: PVC Dielectric strength: 500V AC/min. *Capacitance between conductors. ★Production by order. Please ask us for ordering lot.

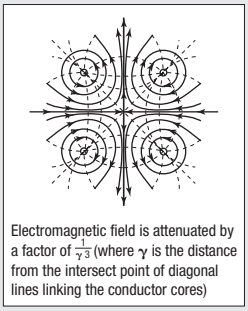
2S7F, 2S9F, 2S11F, 2S14F
● Special supple jacket designed for use in building conduits.

2S7FG, 2S9FG, 2S11FG, 2S14FG
● The G versions feature oxygen-free copper (OFC, JIS H3510) conductors.

Technical Note

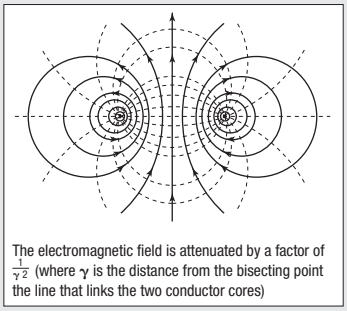
Four-conductor Configuration Minimizes Noise

Because speaker cables are used to transmit comparatively high frequency signals, there is always the danger of electromagnetic noise affecting microphone cables that are used to transmit signals in the very delicate range. To overcome this problem, Canare has adopted a four-conductor configuration for all of its speaker cables. As shown in Fig. 2, the centers of the four conductors are positioned equidistantly in a configuration where the magnetic fields of adjoining cables are designed to cancel each other out. This distance factor significantly enhances the attenuation effect over that of the two-conductor configuration illustrated in Fig. 3. The result is a speaker cable design with a significantly lower noise emission factor.



Electromagnetic field is attenuated by a factor of $\frac{1}{\sqrt{3}}$ (where γ is the distance from the intersect point of diagonal lines linking the conductor cores)

Fig.2 Electromagnetic Field Generated by Four-Conductor Cable



The electromagnetic field is attenuated by a factor of $\frac{1}{\sqrt{2}}$ (where γ is the distance from the bisecting point the line that links the two conductor cores)

Fig.3 Electromagnetic Field Generated by Two-Conductor Cable

Selecting the Right Speaker Cable

The goal when using speaker cables is to keep them as short as possible.A rather lofty ideal, however, given the real demands of large facilities. Power amplifiers are in one location, power lines must be drawn and various other electrical systems for maintenance and safety are also in place. Economic considerations preclude splurging on the thicker, more expensive cabling. The following section describes an example for selecting speaker cables using the damping factor as the criterion.

The damping factor is the damping effect on the speaker that is determined by power amplifier performance. It is expressed using the formula shown below.

$$\text{damping factor} = \frac{\text{speaker impedance}}{\text{power amp. output impedance} + \text{speaker cable conductor resistance}}$$

The greater the damping factor the better the ability to control the speaker and create sharp, clear quality in low range output.

As the formula shows, a high conductor resistance in the speaker cable, the lower the damping factor, which prevents even quality amplifiers from performing at their best.

When selecting cables, users should aim for a higher damping factor in the range of 20 to 50 for music facilities, and a lower factor of 10 to 20 for sports stadiums, where output is mainly speech. The table below shows the damping factors (DF) for various lengths of Canare cable for use as a quick reference.

Table 1 Values calculated assuming power amplifier output impedance is 0.05Ω

Model	Pair cond. resist. (Ω/100m) & cross-sec (mm²)		Cond. resist. (Ω/100m) for return path	Cable length/damping factor	
				DF=20	DF=50
4S6	1.87/1.0mm² AWG	17	3.7	9.5m	3.0m
4S8	0.75/2.5mm²	14	1.5	23.3	7.3
4S10F	0.54/3.5mm²	12	1.1	31.8	10.0
4S11	0.43/4.3mm²	11	0.87	40.2	12.6
4S12F	0.33/5.6mm²	10	0.66	53.0	16.7
4S14F	0.24/8.0mm²	9	0.47	74.5	23.4
4S18F	0.13/14.2mm²	6	0.27	129.6	40.7

OFC Line Cables

Type	Model	Sales units	Nom. O.D	Weight	Inner cond.		Insulation	Outer conductors	Electrical characteristics		
					Cross sec area (AWG) and cond. comp.	Nom. O.D	Nom. O.D	Shield construction and coverage	Chan. D.C.R.	Shield. D.C.R.	Nom. cap.*
		m	mm	kg/100m	mm²/(AWG) Q'ty/mm	mm	mm	mm/ends/carriers	Ω/100m	Ω/100m	pF/m
 **GS-6** Jacket color for GS-4: black GS-6: red, orange, yellow, green, blue, black	**GS-4**	200	4.0	2.7	0.39(22) 50/0.1(OFC)	0.82	1.82	Carbon plastic shield +0.1 (OFC)/6/16 93%	4.7	3.1	—
	GS-6	100 200	5.8	5.0	1.0(18) 127/0.1(OFC)	1.3	3.0	Carbon plastic shield +0.1 (OFC)/8/16 92%	1.8	2.5	160

Insulation: polyethylene Jacket: PVC Dielectric strength: 500V AC/min. *Capacitance between conductor to shield.

GS-4, GS-6

- Outer conductor of fine 0.1mm⌀ OFC strands provide a highly flexible braided configuration. (See photographs A and B)

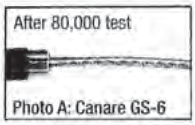


Photo A: Canare GS-6

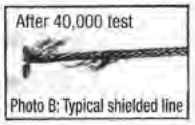


Photo B: Typical shielded line

- Center conductor with 127 fine 0.1mm⌀ strands (50 for GS-4) increases durability.

* Note:
The GS-4 and GS-6 have a layer of carbon plastic shield underneath the braided shield (see Fig. 1) to block out noise. Shorting will result if this shield contacts the center conductor line, so special care must be taken when connecting the cable.

Fig. 1

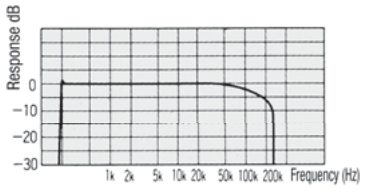


Fig. 2 Frequency Characteristics for GS-6 (100m, 100Ω → 1MΩ load)

DMX Cable

Cable conforms to DMX512 standards for a use of stage lighting control.

Type	Model	Sales units	Nom. O.D	Weight	No. of cond.	Unit composition			Cond. D.C.R.	Charac-teristic impedance
						Cross sec area (AWG) and cond. comp.	Twist pitch	Twist O.D.		
		m	mm	kg/100m		mm²/(AWG) Q'ty/mm	mm	mm	Ω/100m	Ω
 **DMX203-2P** Jacket color: gray, white, black	**DMX203-2P**	100 200 500	7.9	7.9	4	0.35(22) 44/0.10TA	25	3.3	5.9	110

Insulation: Cross-linked PE Jacket: Frame retardant PVC Dielectric strength: 500V AC/min.

DMX203-2P

- PE rod ensures consistent 110Ω impedance with large or small bends in cable during installation.
- Ideal for Neutrik NC5 connectors.
- Assembled cable with connectors (DMC**-B) are also available (see page 78).

RS422 Cables

Type	Cross-section view	Model	Sales units	Nom. O.D	Weight	Unit type		Unit composition			Overall Sield coverage	Comductor resistance	Charac-teristic impedance	Attenuation
								Cross sec area (AWG) and cond. comp.	Shield coverage	Unit O.D.				
			m	mm	kg/100m			mm²/(AWG) Q'ty/mm	%	mm	%	Ω/100m	Ω	dB/100m (–)
 **A2C3** Jacket color: black		**A2C3**	100 200 500	6.5	5.2	A	Digital lines two conductor shielded x 2	0.09(28) 7/0.127TA	90% Spiral shield	2.5	—	25.2	110	—
						C	Control lines 0.2mm² x 3	0.22(24) 11/0.16TA	—	1.24		8.9	—	—
 **A2C3-SS** Jacket color: black		**A2C3-SS**		7.0	7.2	A	Digital lines two conductor shielded x 2	0.09(28) 7/0.127TA	90% Spiral shield	2.5	91% Spiral shield	25.2	110	—
						C	Control lines 0.2mm² x 3	0.22(24) 11/0.16TA	—	1.24		8.9	—	—

Insulation: Cross-linked foam PE Jacket: Frame retardant PVC Dielectric strength: 500V AC/min.

A2C3

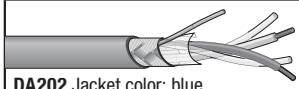
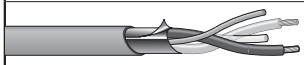
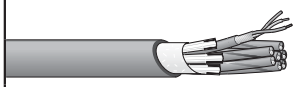
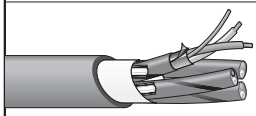
- Short distance version of the RS422 class cables.
- Irradiated foam core PE used for the insulation in the digital signal unit.

A2C3-SS

- Created by adding an overall spiral shield to the A2C3 to heighten shielding performance.

AES/EBU Digital Audio Cables

Ideal for conveying digital audio signals in conformance with AES/EBU and IEC standards.

Type	No. of ch.	Model	Sales units	Nom. O.D	Weight	Unit composition				Electrical characteristics				Characteristic impedance	Attenuation
						Cross sec area (AWG) and cond. comp.	Twist pitch	Shield coverage (braid)	Unit O.D.	Cond. D.C.R	Shield D.C.R.	Nom. cap.*	Nom. cap.**		
			m	mm	kg/100m	mm²/(AWG) Q'ty/mm	mm	%	mm	Ω/100m	Ω/100m	pF/m	pF/m	Ω	dB/100m (3MHz)
 **DA206** Jacket color: blue	1	**DA206**	100 200	7.3	7.5	0.56(20) 7/0.32A	60	95%	—	3.3	1.4	48	73	110	2.6
 **DA202** Jacket color: blue	1	**DA202**		5.0	3.7	0.18(25) 7/0.18A	32	95%	—	10.6	2.2	45	—	110	5.1
 **DA202AT** Jacket color: blue	1	**DA202AT**		4.0	1.6	0.18(25) 7/0.18A	38	—	—	10.6	—	45	—	110	6.7
 ★ **DA203AL** Jacket color: blue	1	**DA203AL**		6.0	4.2	0.29(23) 7/0.23TA Overall tin coated	45	—	—	6.8	—	48	95	110	5.4
	2	**DA202F-2P**	100 200 500	7.7	6.7	0.18(25) 7/0.18TA	25	91% Spiral shield	3.0	11.3	3.0	47	95	110	5.6
	4	**DA202F-4P**		8.8	10										
DA202F-8P Jacket color: blue	8	**DA202F-8P**		11.5	17										
 ★	2	**DA203-2AL**	—	11.8	12	0.29(23) 7/0.23TA Overall tin coated	42	—	4.9	6.9	—	48	95	110	5.4
★	4	**DA203-4AL**		13.8	18										
★	8	**DA203-8AL**		19.3	33										
DA203-4AL Jacket color: blue ★	12	**DA203-12AL**		21.9	44										

Insulation: Cross-linked PE (DA202F-P: Cross-linked foam PE) Jacket: PVC Dielectric strength: 500V AC/min. *Capacitance between conductors **Capacitance between conductor and shield.
★Production by order. Please ask us for ordering lot.

DA206, DA202

- PE rod configuration ensures consistent 110Ω impedance with large or small bends in cable during installation.
- DA206 ideal for degital audio paths up to 360m*.
  DA202 ideal for degital audio paths up to 180m*.

DA202AT

- Disigned for internal cabling connections on racks.
- Ideal for digital audio paths up tp 140m*.

*Condition: AES3 SR48kHz

DA203-AL Series

- Wrapping tool can be used.
- Ideal for degital audio paths up to 170m*.

DA202F Series

- Slim and lightweight.
- DA202F-8P designed to fit snugly with D-sub 25 pin connector.
- Cross-linked foam PE insulation.
- Ideal for digital audio paths up to 140m*.

■ Channel Color Coding

DA202F-P: by the insulator color & the spiral markings on the inner jacket (blue).

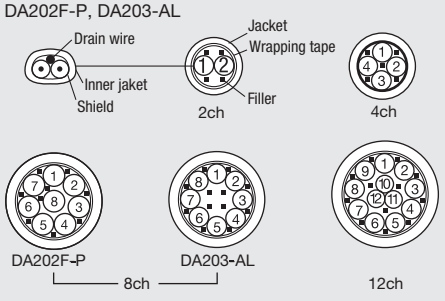
Unit no.	1	2	3	4	5	6	7	8
Insulator Color	BRN, WHT	RED, WHT	ORG, WHT	YEL, WHT	GRN, WHT	BLU, WHT	PUR, WHT	GRY, WHT
Spiral Markings	BRN	RED	ORG	YEL	GRN	—	PUR	GRY

DA203-AL: by the insulator color & the spiral markings on the inner jacket (gray).

Unit no.	1	2	3	4	5	6	7	8	9	10	11	12
Insulator Color	RED, WHT	BLU, WHT	YEL, WHT	GRN, WHT	BRN, WHT	GRY, WHT	BLU, BLK	YEL, BLK	GRN, BLK	BRN, BLK	GRY, BLK	BLU, ORG
Spiral Markings	RED	BLU	YEL	GRN	BRN	—	BLU, BLK	YEL, BLK	GRN, BLK	BRN, BLK	BLK	BLU, ORG

■ Cross-sectional View for DA202F-P & DA203-AL

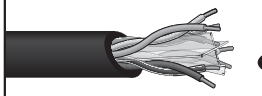
Single Unit Config.
DA202F-P, DA203-AL



Ethernet Cables

Ethernet cables are being used not only for computer networking, but also recently for digital audio networking, network camera, HDBaseT transmission, and so on.
Newly-developed Flex and Rugged CAT5e Cables will meet the wide range of needs such as for temporary cabling.

■ Category 6 Cable

Type	Model	Sales units	Nom. O.D	Weight	Unit composition		Electrical characteristics	Charac-teristic impedance	Attenuation (Insertion loss)
					Cross sec. area Conductor comp.	Shield coverage & comp.	Cond. D.C.R.		
		m	mm	kg/100m	mm²/(AWG) Q'ty/mm	mm/ends/ carriers	Ω/100m	Ω	dB/100m (250MHz)
 NEW	RJC6-4P+	305	6.1	4.0	0.23 (23) 1/0.55A	—	8.2	100	32.8
Jacket color: black, gray									

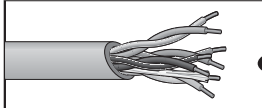
Insulation: polyethylene, Jacket: PVC Dielectric strength: 350V AC/min.

RJC6-4P+

- Standard CAT6 UTP cable, supports 1000BASE-TX, 1000BASE-T, 100BASE-TX, and 10BASE-T.
- Cross-shaped PE separator reduces NEXT (near-end cross talk).
- Solid conductor
- Packaged in REELEX* tangle-free cable dispenser
- Sequential marking at 1 meter intervals.
- Flame resistance UL444 type CM
- Recommended run length is up to 100m.

*REELEX is the registered trademark of REELEX Packaging Solutions, Inc.

■ Category 5e Cable

Type	Model	Sales units	Nom. O.D	Weight	Unit composition		Electrical characteristics	Charac-teristic impedance	Attenuation (Insertion loss)
					Cross sec. area Conductor comp.	Shield coverage & comp.	Cond. D.C.R.		
		m	mm	kg/100m	mm²/(AWG) Q'ty/mm	mm/ends/ carriers	Ω/100m	Ω	dB/100m (100MHz)
 NEW	RJC5E-4P+	305	5.0	3.0	0.20 (24) 1/0.50A	—	9.4	100	22.0 dB/100m
Jacket color: light blue									

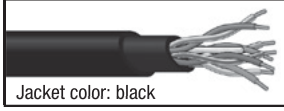
Insulation: polyethylene, Jacket: PVC Dielectric strength: 350V AC/min.

RJC5E-4P+

- Standard CAT5e UTP cable, supports 1000BASE-T, 100BASE-TX, and 10BASE-T.
- Solid conductor
- Packaged in REELEX* tangle-free cable dispenser
- Sequential marking at 1 meter intervals.
- Flame resistance UL444 type CM
- Recommended run length is up to 100m.

*REELEX is the registered trademark of REELEX Packaging Solutions, Inc.

■ Flex and Rugged Catgory 5e Cables

Type	Model	Sales units	Nom. O.D	Weight	Unit composition		Electrical characteristics	Charac-teristic impedance	Attenuation (Insertion loss)
					Cross sec. area Conductor comp.	Shield coverage & comp.	Cond. D.C.R.		
		m	mm	kg/100m	mm²/(AWG) Q'ty/mm	mm/ends/ carriers	Ω/100m	Ω	dB/100m (100MHz)
 Jacket color: black	RJC5ES-4P-BS	100 200	6.7	6.1	0.22(24) 7/0.20A	0.10TA/10/16 (90%)	9.5	100	44.0
 Jacket color: black	RJC5E-4P-WJ	100 200	7.4	5.4	0.22(24) 1/0.53A	—	8.8	100	22.0

Insulation: polyethylen (RJC5ES-4P-BS: Cross-linked polyethylene.) Jacket: PVC Dielectric strength: 350V AC/min. Jacket color orange and white are production by order. Please ask us for ordering lot.

RJC5ES-4P-BS

- Flexible and durable CAT5e STP cable for short distance.
- Supports 1000BASE-T, 100BASE-TX, and 10BASE-T.
- Stranded conductor and a overall braided shield
- Superior flexibility for easy routing and repeated bending

Note: Recommended run length is up to 50m.

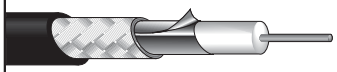
RJC5ES-4P-WJ

- Rugged CAT5e UTP cable
- Supports 1000BASE-T, 100BASE-TX, and 10BASE-T.
- Solid conductor and double jacket
- Rugged and flexible double jacket offers easy routing.
- Recommended run length is up to 100m.

75Ω Coaxial Cables

Canare's variety of 75Ω coaxial cables support full-range of video formats. Our cutting-edge Super Low Loss Coax and Low Loss Coax are ideal for 3G-SDI/HD-SDI distribution.

■ Super Low Loss Coax (Highly-Foamed PE Insulation)

Type		Model	Sales units	Nom. O.D	Weight	Inner cond		Insulation	Outer conductors	Inner cond. resistance	Outer cond. resistance	Static capacity	Charac-teristic impedance	Attenu-ation
						Conductor comp.	O.D.	O.D.	Shield coverage & comp.					
			m	mm	kg/100m	(AWG) Q'ty/mm	mm	mm	mm/ends/carriers	Ω/km	Ω/km	pF/m	Ω	dB/100m 750MHz
 Jacket colors: black, red, yellow, green, blue and others (please ask us).		L-2.5CHD	100 200	4.2	2.6	(23) 1/0.59A	0.59	2.59	0.12TA/7/16 (95%)	64.3	16.9	53	75	30.2
	★	L-4CHD	—	6.1	5.2	(20) 1/0.82A	0.82	3.68	0.14TA/8/16 (95%)	36.4	11.4	53	75	21.3
		L-4.5CHD	100 200	7.0	6.2	(18) 1/1.02A	1.02	4.57	0.14TA/6/24 (91%)	23.3	9.9	53	75	17.4
	★	L-5CHD	—	7.7	7.4	(17) 1/1.20A	1.2	4.9	0.14TA/7/24 (93%)	16.1	8.2	50	75	15.6
		L-6CHD	100 200	8.9	10	(15) 1/1.5A	1.5	6.1	0.14TA/8/24 (92%)	10.3	7.7	50	75	12.9
		L-7CHD		10.2	13	(13) 1/1.8A	1.8	7.3	0.16TA/8/24 (92%)	7.1	6.1	50	75	10.9
	★	L-8CHD	—	11.1	14	(12) 1/2.1A	2.1	8.2	0.16TA/8/24 (89%)	5.8	6.3	50	75	9.6
 NEW Jacket colors: black, red, yellow, green, blue and others (please ask us).		L-2.5CHLT	—	4.2	1.8	(23) 1/0.59A	0.59	2.59	0.14TCCA/6/16 (95%)	6.7	2.2	53	75	30.2

Jacket: PVC Dielectric strength: 1000V AC/min.

★ Production by order. Please ask us for ordering lot.

L-CHD Series

- Best suited to 3G-SDI/HD-SDI transmission.
- Highly-foamed PE insulation allows further improvement in the attenuation characteristics.
- Multi-layer insulation in which to each layer is given a different foaming ratio is used to increase strength.
- High-density tinned copper braided shield with aluminum foil brings excellent shielding.
- Solid conductor
- Flame resistance UL 1666 Riser (excluding L-6CHD, L-7CHD, and L-8CHD).

Note 1: Designed for fixed installation, and do not tolerate repeated bending or external pressure well.
Note 2: Cable strippers (TS100 series) cannot be used for L-CHD series other than L-2.5CHD.
Note 3: L-2.5CHLT has less connection strength with the connector BCP-B25HD compared with L-2.5CHD.

L-2.5CHLT

- Ideal for an O.B. van installation.
- Tinned copper-clad aluminium (CCA) braided shield brings an advantage in weight-saving.
- 30% lighter than L-2.5CHD, yet the same attenuation.
- Space-saving slim design: O.D. 4.2 mm
- High-density braided shield with aluminum foil
- Highly-foamed PE insulation
- Solid conductor

■ Low Loss Coax for Mobile (Highly-Foamed/Foamed PE Insulation)

Type		Model	Sales units	Nom. O.D	Weight	Inner cond		Insulation	Outer conductors	Electrical characteristics			Characteristic impedance	Attenuation
						Conductor comp.	O.D.	O.D.	Shield inner/outer coverage & comp.	Inner cond. re-sistance	Outer cond. re-sistance	Static capacity		
			m	mm	kg/100m	(AWG) Q'ty/mm	mm	mm	mm/ends/carriers	Ω/100m	Ω/100m	pF/m	Ω	dB/100m (750MHz)
 NEW **L-4.5CHWS** Jacket color: black and others		L-4.5CHWS	100 200	7.2	6.6	(18) 7/0.34A	1.02	4.57	0.10A/8/24 (93%) 0.10A/9/24 (95%)	3.3	0.8	53	75	22.8
 **L-3CFW** Jacket colors: black, red, green and others (Please ask us)		L-3CFW	100 200 1000	5.8	5.1	(22) 1/0.65A	0.65	3.1	0.12TA/5/24 (94%) 0.12TA/6/24 (94%)	5.5	0.7	55	75	19.4
		L-5CFW		7.7	8.1	(18) 1/1.05A	1.05	5.0	0.12TA/7/24 (93%) 0.12TA/9/24 (96%)	2.3	0.5	55	75	33.1

Jacket: PVC Dielectric strength: 1000V AC/min.

★Production by order. Please ask us for ordering lot.

L-CHWS Series

- Flexible and durable: Best suited to mobile HD application.
- Designed for withstanding repeated bending.
- Stranded center conductor
- High-density double-braided shiled
- Highly-foamed insulation

Note: Cable stripper TS100E cannot be used.

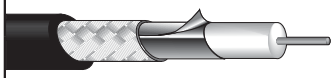
L-CFW Series

- Suited to mobile HD application.
- Achieve a good balance between durability and transmission distance.
- Solid center conductor
- High-density double-braided shield
- Foamed insulation

Note: Cable stripper TS100E cannot be used.

■ Low Loss Coax (Foamed PE Insulation)

Type	Model	Sales units	Nom. O.D	Weight	Inner cond		Insulation	Outer conductors	Electrical characteristics			Characteristic impedance	Attenuation
					Conductor comp.	O.D.	O.D.	Shield coverage & comp.	Inner cond. resistance	Outer cond. resistance	Static capacity		
		m	mm	kg/100m	(AWG) Q'ty/mm	mm	mm	mm/ends/carriers	Ω/100m	Ω/100m	pF/m	Ω	dB/100m 750MHz
★	L-2.5CFB	—	4.0	2.4	(25) 1/0.5A	0.50	2.4	0.12TA/6/16 (92%)	9.3	2.0	55	75	37.0
	L-3CFB	100 200	5.5	4.0	(22) 1/0.65A	0.65	3.1	0.14TA/6/16 (91%)	5.5	1.4			29.1
	L-4CFB		6.1	4.9	(20) 1/0.80A	0.80	3.7	0.14TA/8/16 (93%)	3.6	1.0			23.6
	L-5CFB		7.7	7.3	(18) 1/1.05A	1.05	5.0	0.14TA/7/24 (93%)	2.3	0.8			17.7
	L-7CFB		10.2	13	(15) 1/1.50A	1.5	7.3	0.18TA/8/24 (96%)	1.0	0.5			13.4



L-5CFB
Jacket colors for
L-3CFB, L-4CFB, L-5CFB: red, yellow, green, blue,white, black
Others: black

Jacket: PVC Dielectric strength: 1000V AC/min.

★Production by order. Please ask us for ordering lot.

L-CFB Series

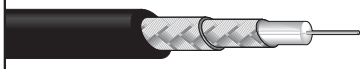
- Suited to HD-SDI, SDI-SDI and analog video.
- High-density tinned copper braided shield with aluminum foil brings excellent shielding.
- Foamed insulation

Note: Designed for fixed installation, and do not tolerate repeated bending or external pressure well.

■ Standard Coax (Solid PE Insulation)

Type	Model	Sales units	Nom. O.D	Weight	Inner cond		Insulation	Outer conductors	Electrical characteristics			Characteristic impedance	Attenuation
					Conductor comp.	O.D.	O.D.	Shield inner/outer coverage & comp.	Inner cond. resistance	Outer cond. resistance	Static capacity		
		m	mm	kg/100m	(AWG) Q'ty/mm	mm	mm	mm/ends/carriers	Ω/100m	Ω/100m	pF/m	Ω	dB/100m (10MHz)
★	L-1.5C2VS	—	2.9	1.3	(31) 7/0.09A	0.27	1.6	0.10A/5/16 (94%)	41.9	3.2	69	75	8.7
	L-3C2VS	100 200	5.5	4.5	(25) 7/0.18A	0.54	3.1	0.12A/7/16 (94%)	10.5	1.9	67		4.5
	LV-61S	153	6.1	5.0	(24) 7/0.20A	0.60	3.6	0.12A/6/24 (95%)	8.5	1.3			3.8
	L-5C2VS	100 200	7.4	6.8	(22) 7/0.26A	0.78	4.8	0.12A/7/24 (93%)	5.0	1.2			2.9
★	L-2.5C2V	—	4.0	2.4	(26) 1/0.4A	0.40	2.4	0.12TA/6/16 (94%)	14.7	2.1	69		5.2
	L-3C2V	100 200	5.4	4.3	(25) 1/0.50A	0.50	3.1	0.14TA/5/24 (97%)	9.3	1.2	67		4.1
	L-5C2V	*	7.4	7.2	(21) 1/0.80A	0.80	4.9	0.14TA/7/24 (94%)	3.6	0.8			2.5
	L-3C2W	100 200	6.5	7.0	(25) 1/0.50A	0.50	3.1	0.14TA/5/24 (97%) 0.14TA/5/24 (93%)	9.3	0.6	67	75	4.1
★	L-5C2W	—	8.3	11.0	(20) 1/0.80A	0.80	4.9	0.14TA/7/24 (94%) 0.14TA/7/24 (95%)	3.6	0.4			2.5
	LV-77S	153	7.7	9.0	(22) 7/0.26A	0.78	4.8	0.12A/7/24 (92%) 0.12A/8/24 (95%)	5.0	0.55			3.4

L-3C2VS
Jacket color
L-3C2VS, L-5C2VS: brn, red, orn, yel, grn, blu, gry, wht, blk
L-3C2V, L-5C2V: red, yel, grn, blu, gry wht, blk
LV-61S: blu, red, yel, blk, wht, orn, brn, gry, grn, ppl
Others: black



L-3C2W
Jacket color: black

Jacket: PVC Dielectric strength: 1000V AC/min. *100m/200m/500m/1000m

★Production by order. Please ask us for ordering lot.

L-1.5C2VS, L-3C2VS, L-5C2VS, LV-61S

- Stranded center conductor ideal for locations requiring cable bending.

L-2.5C2V, L-3C2V, L-5C2V

- Solid center conductor
- Conforms to JIS standard.

L-3C2W, L-5C2W, LV-77S

- Double-braided shield enhances shielding performance.

75Ω Coaxial Multichannel Cables

Combining multiple coaxial cables into one simplifies wiring for video peripherals

Inner jackets for individual units are color-coded for easy signal line identification. Significantly reduces work required to phase-compensate differences in line lengths.

Type		Model	No. of ch.	Sales units	Nom. O.D	Weight	Unit composition: Inner cond. Cross sec. area tion conductor comp.	Inner cond. O.D.	Insulation O.D.	Outer conductor Braid coverage	Unit O.D.	Electrical characteristics: Inner cond. resistance	Outer cond. resistance	Characteristic impedance	Attenuation
				m	mm	kg/100m	mm²/(AWG) Q'ty/mm	mm	mm	mm/ends/carriers	mm	Ω/100m	Ω/100m	Ω	dB/100m (10MHz)
 V4-*C Jacket color: black Insulation: PE		V3-1.5C	3	100 500	7.4	7.3	Refer to L-1.5C2VS (P53)				2.6	42.4	3.3	75	8.7
		V4-1.5C	4		8.4	9.4									
		V5-1.5C	5		9.2	11									
		V3-3C	3		11.5	15	0.18 (25) 7/0.18A	0.54	3.1	0.14A/5/24 (97%)	4.4	10.6	1.1	75	4.5
		V4-3C	4		13.0	20									
		V5-3C	5		14.2	24									
		V3-5C	3		15.5	23	Refer to L-5C2VS (P53)				6.0	5.1	1.2	75	2.9
		V4-5C	4		17.1	30									
		V5-5C	5		19.2	38									
 V5-*CFW Jacket color: black Insulation: Foam PE	★	V5-3CFW	5	—	16.2	34	Refer to L-3CFW (P52)				4.9	5.6	0.7	75	3.4
	★	V5-5CFW	5		22.4	58	Refer to L-5CFW (P52)				7.0	2.4	0.5	75	2.1
 V4-*CFB Jacket color: black Insulation: Foam PE		V3-3CFB	3	—	11.5	14	Refer to L-3CFB (P53)				4.4	5.6	1.4	75	3.7
	★	V4-3CFB	4		13.0	19									
		V5-3CFB	5	100 500	14.2	23									
	★	V3-4CFB	3	—	12.9	18	Refer to L-4CFB (P53)				5.0	3.7	1.0	75	3.0
	★	V4-4CFB	4		14.4	23									
	★	V5-4CFB	5		16.1	29									
		V3-5CFB	3	100 500	17.1	29	Refer to L-5CFB (P53)				6.5	2.3	0.8	75	2.2
	★	V4-5CFB	4		18.8	36									
		V5-5CFB	5		21.1	46									

Jacket PVC Dieritric strength: 1000V AC/min.

★Production by order. Please ask us for ordering lot.

V-C Series

- Our best selling multi channel coax, ideal for component video. Bundled thinner jacket type of Canare L-xC2VS: flexible stranded conductor and solid PE insulation. Distinguishable RGB color-coded.

V-CFB Series

- Bundled thinner jacket type of Canare L-xCFB: solid conductor and foamed PE insulation wrapped with aluminum foil. Excellent low attenuation performance will fit for digital video in fixed installations. Distinguishable RGB color-coded.

V-CFW Series

- Newly developed for HD mobile application. Bundled thinner jacket type of Canare L-xCFW: solid conductor, foamed PE insulation, double braided shield. Excellent low attenuation and distinguishable RGB color-coded.

Cable Cross Section

3CH 4CH 5CH

75Ω Triaxial Cables

Type		Model	Sales units	Nom. O.D	Weight	Inner cond. Cross sec. (AWG) & comp.	Inner cond. O.D.	Insulation 1 O.D.	Outer cond.1 Braid coverage and comp.	Insulation 2 O.D.	Outer cond.2 Braid coverage and comp.	Electrical characteristics: Inner cond. resistance	Outer cond. resistance	Static capacity	Characteristic impedance	Attenuation
			m	mm	kg/100m	mm²/(AWG) Q'ty/mm	mm	mm	mm/ends /carriers	mm	mm/ends /carriers	Ω/100m	Ω/100m	pF/m	Ω	dB/100m (10MHz)
 L-5CFTX Jacket colors: black, red, green		L-5CFTX	100 200	8.8	12.0	0.79(19) 1/1.0A	1.0	4.8	0.14A/6/24 (91%)	6.4	0.16A/8/24 (95%)	2.3	—	55	75	2.2
	★	L-4CFTX		9.1	10.5	0.50(20) 1/0.80A	0.80	3.7	0.14A/7/16 (93%)	5.5	0.14A/7/24 (94%)	3.64	—	55	75	3.0
	★	L-7CFTX	100 200 500	11.0	15.4	1.54(16) 1/1.40A	1.40	6.5	0.14A/8/24 (93%)	8.7	0.14A/8/24 (88%)	1.18	—	55	75	1.7
	★	10CFTX-SC		14.5	27.0	3.01(13) 7/0.74A	2.22	9.6	0.14A/10/24 (95%)	11.4	0.16A/10/24 (94%)	0.62	—	55	75	1.1

Insulation: 1: foam PE, 2: polyethylene Dielectric strength: 1000V AC/min.

★Production by order. Please ask us for ordering lot.

- Abrasion-resistance PVC jacket.
- Cable assemblies also available. (See page 73)

A/V Composite Cables

Used for linking audio video equipment and as extensions for video cameras.

Type		Model	Sales units	Nom. O.D	Weight	Unit type V: Video A: Audio C: Control line		Unit composition: Cross sec. area Conductor comp.	Unit composition: Shield coverage	Unit composition: Unit O.D.	Electrical characteristics: Characteristic impedance	Electrical characteristics: Attenuation
			m	mm	kg/100m			mm²/(AWG) Q'ty/mm	%	mm	Ω	dB/100m (10MHz)
 A2V1 Jacket color: black		A2V1	100 200	9.7	11	V	Video 3C-2V×1	0.20(24) 1/0.5A	97% (braid)	4.4	75	4.1
						A	Audio L-2B2AT×2	Refer to L-2B2AT	Alminum foil shield	3.2	—	—
		A2V2-L		11.0	16	V	Video 3C-2V×2	0.20(24) 1/0.5A	97% (braid)	4.4	75	4.1
						A	Audio L-2B2AT×2	Refer to L-2B2AT	Alminum foil shield	3.2	—	—
						C	Control lines 0.2mm²×4	0.20(24) 18/0.12A	—	1.3	—	—
		A2V1B		11.1	13	V	Video 3C-2VS×1	0.18(25) 7/0.18A	97% (braid)	4.4	75	4.5
						A	Audio 4E3 Unit×2	0.08(29) 7/0.12A	93% (braid)	3.4	—	—
		A2V2B		12.3	17	V	Video 3C-2VS×2	0.18(25) 7/0.18A	97% (braid)	4.4	75	4.5
						A	Audio 4E3 Unit×2	0.08(29) 7/0.12A	93% (braid)	3.4	—	—
★		A3V2-FB	—	12.4	17	V	Video 3CFB Unit×2	0.33(22) 1/0.65A	91% (braid) + Alminum foil	4.4	75	3.7
						A	Audio L-2B2AT×3	Refer to L-2B2AT	Alminum foil shield	3.2	—	—

Jacket: PVC Dielectric strength: 500V AC/min.

★Production by order. Please ask us for ordering lot.

A2V1, A2V2-L

● Designed for fixed installation.

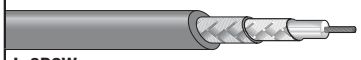
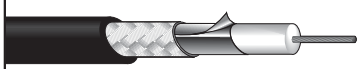
A2V1B, A2V2B

● Ideal for locations requiring cable bending.

A3V2-FB

● 3 balanced audio channels and 2 video coax channels for ENG, EFP, or OB applications.

50Ω Coaxial Cables

Type		Model	Sales units	Nom. O.D	Weight	Inner cond: Cross sec. (AWG) & comp.	Inner cond: O.D.	Insulation: O.D.	Outer conductors: Shield inner/outer coverage & comp.	Electrical characteristics: Inner cond. resistance	Electrical characteristics: Outer cond. resistance	Electrical characteristics: Static capacity	Characteristic impedance	Attenuation
			m	mm	kg/100m	mm²(AWG) Q'ty/mm	mm	mm	mm/ends/carriers	Ω/100m	Ω/100m	pF/m	Ω	dB/100m (10MHz)
	★	L-3D2V	—	5.3	4.5	0.56(20) 7/0.32A	0.96	3.0	0.14TA/5/24 (98%)	3.3	1.2	100	50	4.5
L-3D2V Jacket color: gray	★	L-5D2V		7.3	7.9	1.54(15) 1/1.40A	1.40	4.8	0.14TA/7/24 (95%)	1.2	0.8			2.5
		L-3D2W	100 200	6.4	7.3	0.56(20) 7/0.32A	0.96	3.0	0.14TA/5/24 (98%) 0.14TA/5/24 (96%)	3.3	0.6			4.5
L-3D2W Jacket color: gray		L-5D2W		8.0	11.0	1.54(15) 1/1.40A	1.40	4.8	0.14TA/7/24 (95%) 0.14TA/7/24 (96%)	1.2	0.4			2.5
 Jacket color: black		L-5DFB	100 200	7.6	8.5	2.55(13) 1/1.80A	1.80	5.0	0.14TA/6/24 (90%)	0.7	1.1	84		2.5

Insulation: polyethylene Jaket: PVC Dielectric strength 1000V AC/min.

★Production by order. Please ask us for ordering lot.

L-3D2V, L-3D2W, L-5D2V and L-5D2W

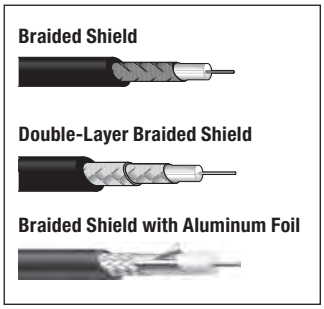
● Tinned annealed copper used on outer conductors.

L-5DFB

● Low-loss foamed PE used for insulation.

Technical Note

Many types of video coax. What're the differences and how select?



In brief, there are three of essential factors: 1) center conductor, 2) insulation, and 3) shield. Each factor has its advantage and disadvantage as described below:

1) Center Conductor: two types existing, "Solid" and "Stranded". Stranded conductor is more flexible and therefore the best choice for mobile and stage use.
2) Insulation: includes "Solid", "Foamed", and "Highly-foamed" types. Foamed and highly-foamed insulation would perform better attenuation, compared to the solid type thus they are often selected for hi-def video. However, since foamed and high-foamed insulation contain the air physically, they are weak to external pressure. You should pay attention to where and how the cables are installed.
3) Shield: we have "Braided" and "Braided with aluminum foil" type. Braided shields include single, double, or triple layers as well as bare copper or tinned copper. Braided with aluminum foil offers perfect screening, but they are not suitable for movement-intensive and mobile applications due to the foil's lack of strength. In that case, it's better to choose "Braided".

What is Propagation Delay?

Propagation delay refers to the time required for a signal to be transmitted from one end of connection to another. In the case of cable transmission, this greatly depends on the materials and construction of the actual cable, and large differences in delay can cause transmission errors if they exceed the receiver delay tolerance.

The following table shows the differences in coaxial cable propagation delay time relative to the insulation type.

Propagation Delay Caused by Coaxial Cable Insulation (reference)

Insulation	Propagation Delay
Solid PE	5.0 ns/m
Foamed PE	4.2 ns/m
Highly-Foamed PE	3.7 ns/m

■ Maximum Transmission Distance by Video Format (reference)

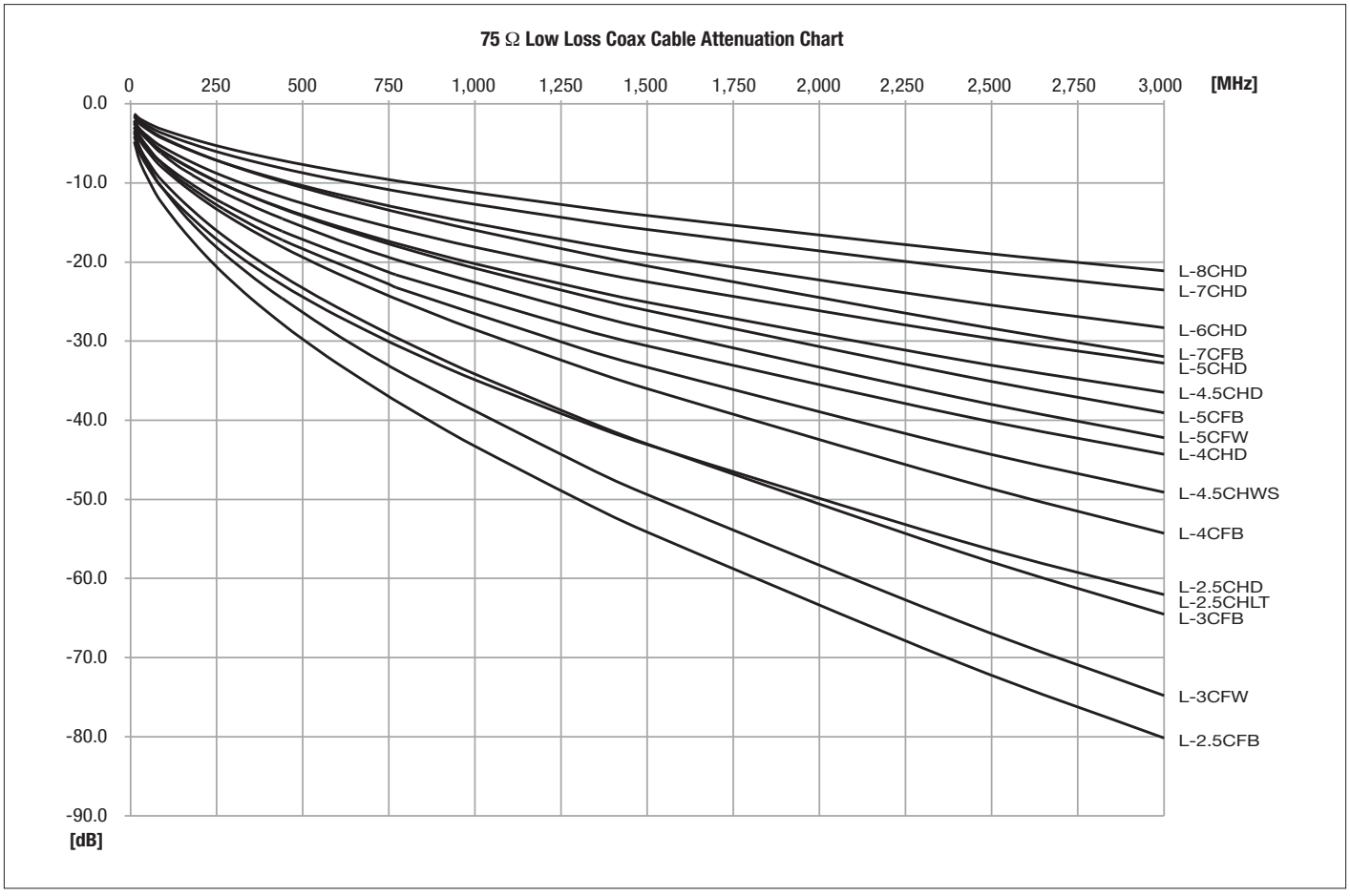
Standard	SMPTE 259M	ITU-R BT. 601	SMPTE 259M	SMPTE 259M	SMPTE 344M	SMPTE 292M	SMPTE ST 424
Video Format	Composite NTSC	Composite PAL	Component 4:2:2	Component 4:2:2 16x9	SDI	HD-SDI	3G-SDI
Bit Rate	143 Mb/s	177 Mb/s	270Mb/s	360Mb/s	540Mb/s	1.5Gb/s	3.0 Gb/s
Model	m	m	m	m	m	m	m
L-2.5CFB	265	242	199	172	139	54	55 (36)
L-2.5CHD/L-2.5CHLT	314	287	237	206	168	66	69 (46)
L-3CFB	344	314	257	222	179	68	69 (46)
L-4CFB	422	314	315	272	220	84	86 (57)
L-4CHD	447	410	337	294	238	93	98 (65)
L-5CFB	563	513	420	364	294	112	114 (76)
L-4.5CHD	551	504	415	361	293	115	119 (79)
L-5CHD	614	562	464	403	327	128	133 (88)
L-6CHD	766	700	575	499	403	154	158 (105)
L-7CHD	902	824	678	589	476	184	188 (125)
L-8CHD	1035	945	777	674	544	208	212 (141)
L-3CFW	319	288	230	197	158	60	60 (40)
L-4.5CHWS	447	405	322	280	225	87	90 (60)
L-5CFW	535	483	384	333	267	103	105 (70)

The above values are based on SMPTE standards. Our criteria is as follows: (SMPTE 424M)
292M & 424M : The listed coaxial cable's attenuation value does not exceed 20 dB loss at one-half the clock frequency (bit rate).
ST 424 & others : The listed coaxial cable's attenuation value does not exceed 30 dB loss at one-half the clock frequency (bit rate).
Recommended margin: 2 or 3 dB. See page 57 for the nominal attenuation.

■ Nominal Attenuation

dB/100m

Model \ Frequency		10MHz	30MHz	SMPTE 259M Composite NTSC 72.0MHz	ITU-R BT.601 Composite PAL 88.0MHz	SMPTE 259M Component 4:2:2 135MHz	SMPTE 259M Component 4:2:2 16x9 180MHz	SMPTE 344M 540Mb/s SDI 270MHz	440MHz	SMPTE 292M HD-SDI 750MHz	1.3GHz	SMPTE ST 424 3G-SDI 1.5GHz	2.4GHz	3GHz
75Ω	L-1.5C2VS/V*-1.5C	8.7	15.2	23.8	26.4	32.9	38.1	47.1	60.8	—	—	—	—	—
	L-2.5CFB	4.8	7.6	11.3	12.4	15.1	17.4	21.5	27.8	37.0	50.0	54.1	70.5	80.2
	L-2.5CHD/L-2.5CHLT	4.1	6.5	9.5	10.4	12.6	14.5	17.8	22.9	30.2	40.0	43.1	55.1	62.0
	L-3C2V/L-3C2W	4.1	7.2	11.3	12.5	15.7	18.3	22.8	29.7	40.0	—	—	—	—
	L-3C2VS/V*-3C	4.5	7.9	12.4	13.7	17.2	20.0	24.8	32.3	43.2	—	—	—	—
	L-3CFB/V*-3CFB	3.7	5.9	8.7	9.5	11.7	13.5	16.7	21.7	29.1	39.6	43.0	56.5	64.5
	L-3CFW/V*-3CFW	3.4	5.9	9.4	10.4	13.0	15.2	18.9	24.6	33.1	45.4	49.4	65.3	74.8
	L-4CFB	3.0	4.8	7.1	7.8	9.5	11.0	13.6	17.7	23.6	31.9	34.6	45.2	51.5
	V*-4CFB	3.0	4.9	7.2	7.9	9.7	11.2	13.9	18.1	24.3	33.2	36.0	47.5	54.3
	L-4.5CHD	2.3	3.7	5.4	6.0	7.2	8.3	10.2	13.2	17.4	23.2	25.1	32.3	36.5
	L-4.5CHWS	2.5	4.3	6.7	7.4	9.3	10.7	13.3	17.2	22.8	30.8	33.3	43.3	49.1
	L-5C2V/L-5C2W	2.5	4.5	7.1	7.9	9.9	11.6	14.4	19.0	25.7	35.6	38.9	52.0	59.9
	L-5C2VS/V*-5C	2.9	5.2	8.1	9.0	11.4	13.3	16.5	21.7	29.2	40.5	44.1	58.7	67.5
	L-5CFB/V*-5CFB	2.2	3.6	5.3	5.8	7.1	8.2	10.2	13.2	17.7	24.1	26.1	34.3	39.1
	L-5CFW/V*-5CFW	2.1	3.6	5.6	6.2	7.8	9.0	11.2	14.5	19.4	26.2	28.4	37.1	42.2
	L-5CHD	2.1	3.3	4.9	5.3	6.5	7.4	9.1	11.8	15.6	20.8	22.5	29.0	32.8
	L-6CHD	1.7	2.7	3.9	4.3	5.2	6.0	7.4	9.7	12.9	17.5	19.0	24.8	28.3
	L-7CFB	1.6	2.5	3.8	4.2	5.1	6.0	7.5	9.8	13.4	18.8	20.5	27.6	32.0
	L-7CHD	1.4	2.3	3.3	3.6	4.4	5.1	6.3	8.2	10.9	14.7	15.9	20.7	23.5
	L-8CHD	1.2	2.0	2.9	3.2	3.9	4.4	5.5	7.2	9.6	13.0	14.1	18.5	21.1
	LV-61S	3.8	6.6	10.4	11.6	14.5	16.9	20.9	27.3	36.6	49.9	54.2	71.5	81.7
50Ω	L-3D2V/L-3D2W	4.5	8.0	12.6	14.1	17.7	20.7	25.9	34.1	46.4	64.5	70.4	94.6	109.2
	L-5D2V/L-5D2W	2.5	4.4	7.0	7.7	9.7	11.4	14.2	18.7	25.5	35.4	38.6	51.8	59.7
	L-5DFB	2.5	3.9	5.7	6.2	7.5	8.6	10.8	14.1	19.0	26.1	28.4	37.7	43.2



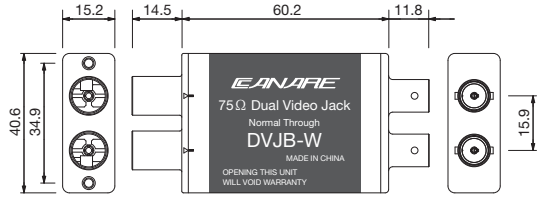
75Ω Video Patchbays

3G-ready HD-SDI video patchbays featuring Canare's uniquely-developed rotary switches.

	Model	Panel Size	Loaded Video Jacks
	20DV	1RU	20 x DVJB-W
	20DVS	1RU	20 x DVJB-S
★	**20DV-2U**	2RU	20 x DVJB-W
★	**20DVS-2U**	2RU	20 x DVJB-S
	24DV	1RU	24 x DVJB-W
★	**24DVS**	1RU	24 x DVJB-S
	24DV-2U	2RU	24 x DVJB-W
★	**24DVS-2U**	2RU	24 x DVJB-S
	26DV	1RU	26 x DVJB-W
	26DVS	1RU	26 x DVJB-S
	26DV-2U	2RU	26 x DVJB-W
★	**26DVS-2U**	2RU	26 x DVJB-S

★Production by order
*Colors other than black are available on custom-made basis. (See page 61)

26DV

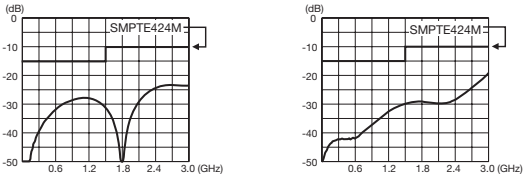


75Ω Dual Video Jacks

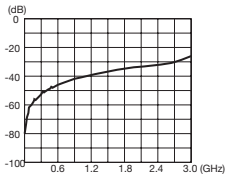
Model	Description
DVJB-W	Normal Through
DVJB-S	Straight Through
VJ-DC	Dust Cap for Video Jack (color: black 40pcs)

Key Features and Benefits

- Rotary switch has been improved for superior isolatinon.
- Also usable as digital audio patchbay.
- Can be recessed 25mm.
- Wide designation strip (2RU type).
- Lightweight aluminum alloy video jacks.



Return loss for DVJB-W



Isolation

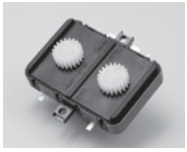
Return Loss & Isolation

Model	Return Loss			Isolation
	BNC-BNC: Normal Through	BNC-VIDEO: Patch Through	BNC-Self Termination	
DVJB-W	26dB or greater (~750MHz)			35dB or greater (~1.5GHz) 20dB or greater (~3.0GHz)
	20dB or greater (~2.4GHz)			
	10dB or greater (~3.0GHz)			
DVJB-S	N/A	26dB or greater (~750MHz)	26dB or greater (~750MHz)	35dB or greater (~1.5GHz) 20dB or greater (~3.0GHz)
		20dB or greater (~2.4GHz)	20dB or greater (~1.5GHz)	
		10dB or greater (~3.0GHz)	10dB or greater (~3.0GHz)	

Technical Note

Rotary Switch Technology and Signal Routing Chart

At the heart of the video jack is an independently-developed rotary switch which has been specially designed for use with high frequency signals.
It features dual-contact construction for improved contact stability.



W Series (Normal Through)			
Video Port: No Patch		**BNC Port:** Signal thru as Arrowed	Signal routes between top and bottom BNC without the use of Video plugs.
Video Port: Patch Upper		**BNC Port:** Lower Terminated	Inserting a Video Patch Cord into front "upper" port automatically terminates signal path into the lower 75Ω load.
Video Port: Patch Lower		**BNC Port:** Upper Terminated	Inserting a Video Patch Cord into front "lower" port automatically terminates signal path into the upper 75Ω load.
Video Port: Patch Both		**BNC Port:** Signal thru as Arrowed	Inserting Video Patch Cords into both front ports inputs and/or outputs signal.

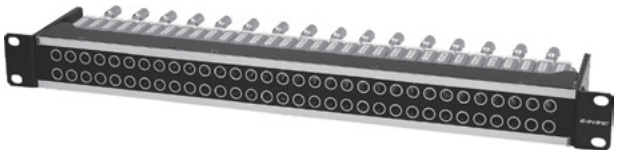
S Series (Straight Through)			
Video Port: No Patch		**BNC Port:** Both Signal Terminated	Two independent single jacks in a dual housing.
Video Port: Patch Upper		**BNC Port:** Lower Terminated	Inserting a Video Patch Cord into front "upper" port automatically terminates signal path into the lower 75Ω load.
Video Port: Patch Lower		**BNC Port:** Upper Terminated	Inserting a Video Patch Cord into front "lower" port automatically terminates signal path into the upper 75Ω load.
Video Port: Patch Both		**BNC Port:** Signal thru as Arrowed	Inserting Video Patch Cords into both front ports inputs and/or outputs signal.

75Ω Staggered Mid-size Video Patchbays

3G-ready mid-size video jacks allow for more efficient use of rack space.

Model	Panel Size	Loaded Video Jacks
32MD-ST	1RU	32 x MDVJ-STW
32MD-STS	1RU	32 x MDVJ-STS
★ **32MD-ST-2U**	2RU	32 x MDVJ-STW
★ **32MD-STS-2U**	2RU	32 x MDVJ-STS
32MD-ST-4U	4RU	96 x MDVJ-STW
32MD-STS-4U	4RU	96 x MDVJ-STS

★Production by order
*Colors other than black are available on custom model basis except 4RU type (See page 61).



32MD-STS

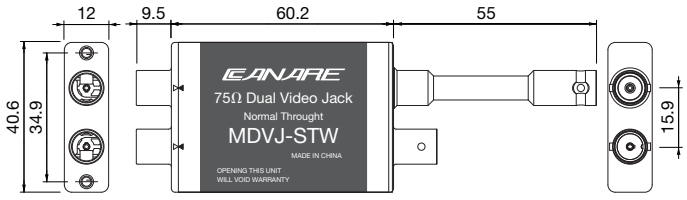
75Ω Staggered Mid-size Video Jacks

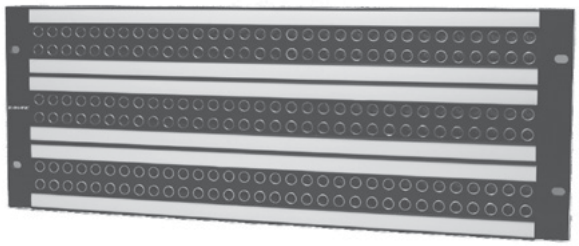
Model	Description
MDVJ-STW	Staggered Mid-size Video Jack, Normal Through
MDVJ-STS	Staggered Mid-size Video Jack, Straight Through
MVJ-DC	Dust cap for Mid-size video Jack (color: black 40pcs)

Key Features and Benefits

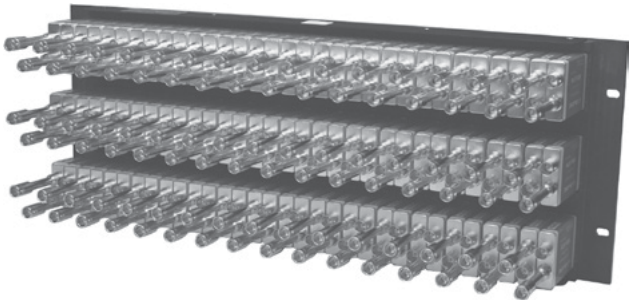
- 32 channels of I/O into 1RU or 2RU, 96 channels of I/O into 4RU.
- Rotary switch has been improved for superior isolatinon.
- Can be recessed 25mm (1RU, 2RU type).
- Wide designation strip (2RU, 4RU type).
- Lightweight aluminum alloy video jacks.
- Industry standard BNC plugs can be used.

Note : Be sure to use with Mini-Weco video plug.

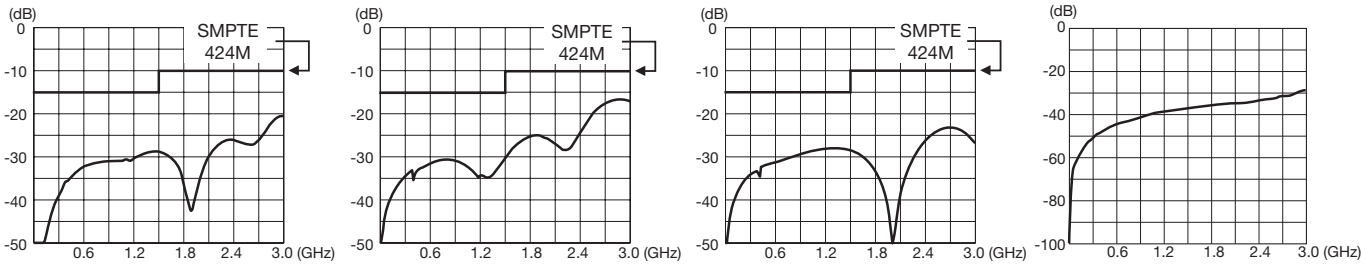




32MD-ST-4U



32MD-ST-4U (Rear View)



Normal Through | Patch Through (Long BNC port) | Patch Through (Short BNC port) | **Isolation**

Return loss for MDVJ-STW

Return Loss & Isolation

Model	Return Loss			Isolation
	BNC-BNC: Normal Through	BNC-VIDEO: Patch Through	BNC-Self Termination	
MDVJ-STW	26dB or greater (~750MHz)			35dB or greater (~1.5GHz) 20dB or greater (~3.0GHz)
	20dB or greater (~2.4GHz)			
	10dB or greater (~3.0GHz)			
MDVJ-STS	N/A	26dB or greater (~750MHz)	26dB or greater (~750MHz)	35dB or greater (~1.5GHz) 20dB or greater (~3.0GHz)
		20dB or greater (~2.4GHz)	20dB or greater (~1.5GHz)	
		10dB or greater (~3.0GHz)	10dB or greater (~3.0GHz)	

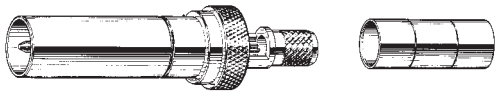
Video Plug (W.E.Standard)

Model	Suitable Cable	Boot	Die Set
VWP-C4A	LV-61S, RG-59B/U, Belden 8241, 8279, 88241	CB04	TCD-451CA TCD-4CA

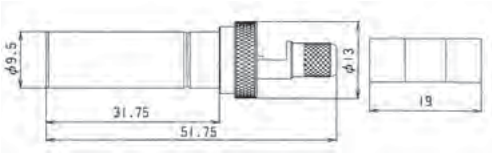
•Standard Package (20pcs)

- Gold-plated center contact resists deterioration over years of use.
- Solder center contact and crimp sleeve.

Be sure to use Canare crimping tool for installing connectors on cables.



VWP-C4A



VWP-C4A

Mini-WECO Video Plug

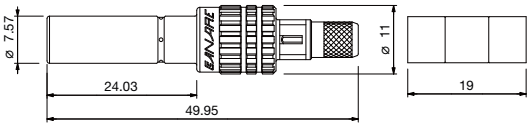
Model	Suitable Cable	Boot	Die Set
MVP-C4	LV-61S, RG-59B/U, Belden 8241, 8279, 88241	CB25	TCD-451CA TCD-4CA

•Standard Package (20pcs)

- Return loss: 26 dB or greater (DC - 1.5GHz), 20dB or greater (DC - 2.4GHz).
- Gold-plated center contact resists deterioration over years of use.
- Solder center contact and crimp sleeve.

Be sure to use Canare crimping tool for installing connectors on cables.

MVP-C4



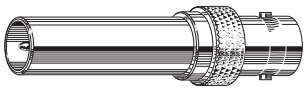
MVP-C4

Video Conversion Connectors

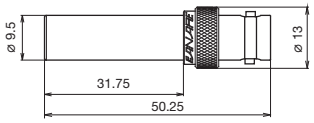
Model	Description
BCJ-VWP	BNC (female) - Video plug (W.E.Standard)
BCJ-MVP	BNC (female) - Mini-WECO Video plug

•Standard Package: BCJ-VWP (1pcs), BCJ-MVP (10pcs)

Note: BCJ-MVP is recommended to use with Slim BNC plug.



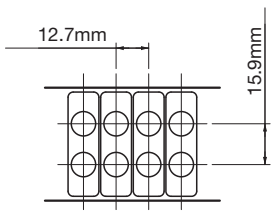
BCJ-VWP



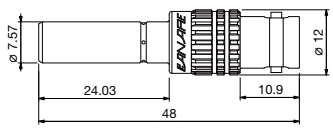
BCJ-VWP

<Caution>
Conventional video plugs and BNC connectors are too large in O.D. to be connected to the 32-Channel Video Patchbay. Please be sure to use only the appropriate connectors, referring to the tables on this page.

Conventional BNC Plug　　Slim BNC Plug



BCJ-MVP



BCJ-MVP

Ordering Information

Standard Video Patchbays

26	DV	S	-	5	-	2U

Number of Video Jacks

20	20pcs
24	24pcs
26	26pcs

Circuit Type

Blank	Normal Through
S	Straight Through

Rack Unit (height)

Blank	1RU
2U	2RU

Panel Color

Blank	Black
1	Brown
2	Red
3	Orange
4	Yellow
5	Green
6	Blue
7	Purple
8	Gray
9	White

Mid-size Video Patchbays

32 MD	-	ST	S	-	1	-	2U

Circuit Type

Blank	Normal Through
S	Straight Through

Rack Unit (height) & Number of Video Jacks

Blank	1RU, 32 Jacks
2U	2RU, 32 Jacks
4U	4RU, 96 Jacks

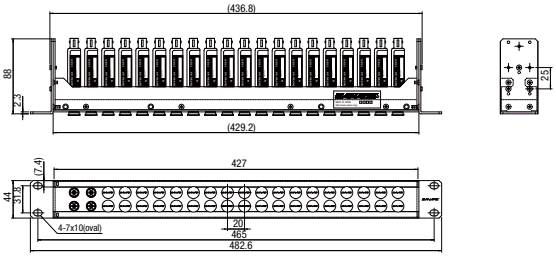
Panel Color

Blank	Black
1	Brown
2	Red
3	Orange
4	Yellow
5	Green
6	Blue
7	Purple
8	Gray
9	White

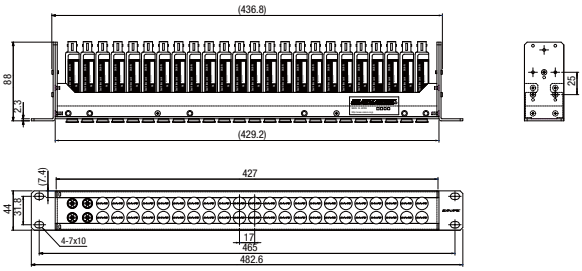
Note:
1) 4RU type is available in black color only
2) 4RU type can not be recessed.

Designation Strip Dimensions
1RU: 426mm x 6.2mm
2RU: 420mm x 18.4mm
4RU: 431.8mm x 13.2mm

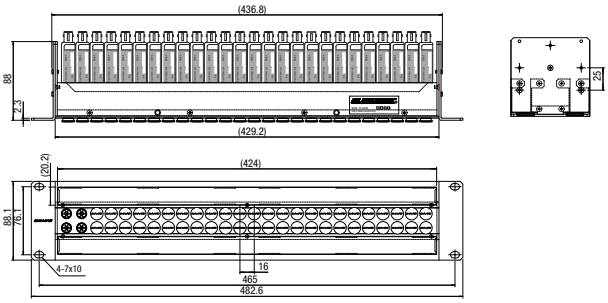
20DV (1RU)



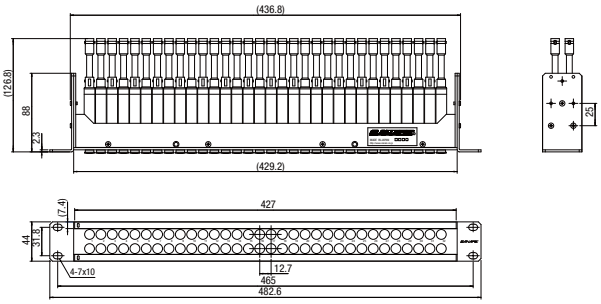
24DV (1RU)



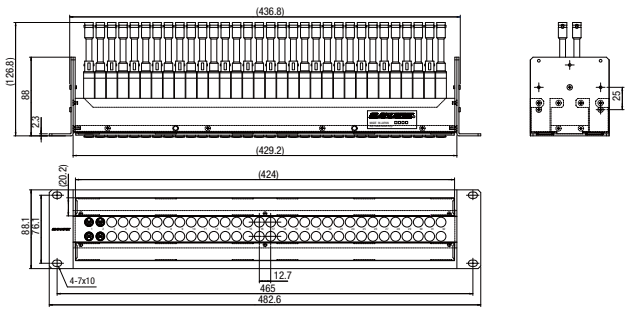
26DV-2U (2RU)



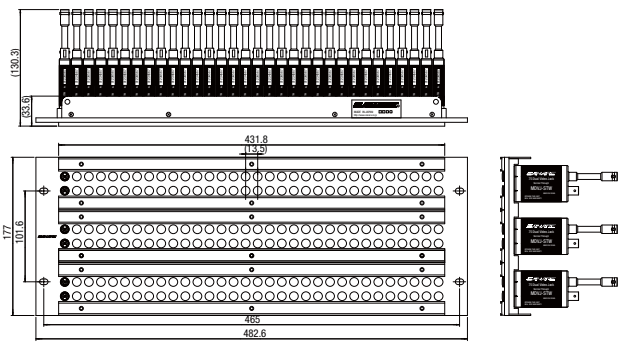
32MD-ST



32MD-ST-2U



32MD-ST-4U

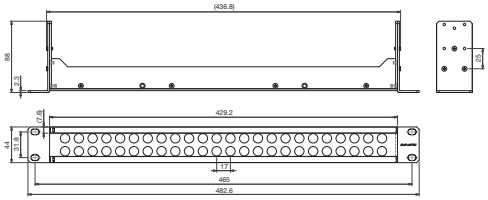


Unloaded Video Jack Panels

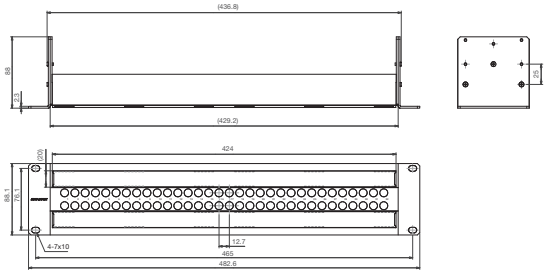
	Model	Panel Size	Description
★	**VJ2-V20-1U-*****	1RU	20ch (40 holes), for DVJB
★	**VJ2-V20-2U-*****	2RU	20ch (40 holes), for DVJB
★	**VJ2-V24-1U-*****	1RU	24ch (48 holes), for DVJB
★	**VJ2-V24-2U-*****	2RU	24ch (48 holes), for DVJB
★	**VJ2-V26-1U-*****	1RU	26ch (52 holes), for DVJB
★	**VJ2-V26-2U-*****	2RU	26ch (52 holes), for DVJB
★	**MJ2-M32-1U-*****	1RU	32ch (64 holes), for MDVJ
★	**MJ2-M32-2U-*****	2RU	32ch (64 holes), for MDVJ
★	**VJ2-M32-4U**	4RU	96ch (3 x 32ch, 192 holes), for MDVJ (Color: Black)

★Production by order
*** : Please see the following ordering information for complete model number.

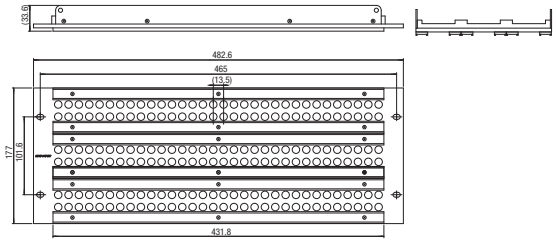
VJ2-V24-1U-BLK



MJ2-M32-2U-BLK



VJ2-M32-4U



<Ordering Information>

Coding Ex.

VJ2	-	V20	-	2U	-	BLK

Panel Size

1U	1RU
2U	2RU
4U	4RU

Color Codes

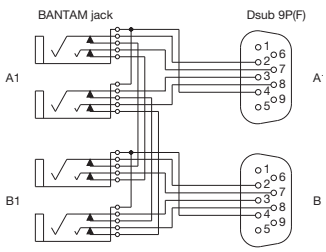
BLK	Black
BRN	Brown
RED	Red
ORG	Orange
YEL	Yellow
GRN	Green
BLU	Blue
PPL	Purple
GRY	Gray
WHT	White

RS422 Patchbays

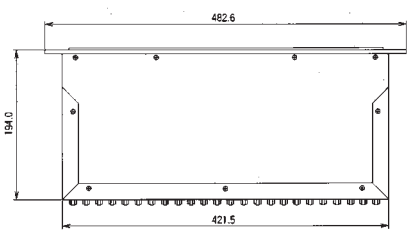
Model	Panel Size	Connectors	
		Front Panel	Rear Panel
RS-422-1U-16	**1RU**	Bantam	D sub 9P(F)×16
RS-422-1U-24	**1RU**	Bantam	D sub 9P(F)×24
RS-422-2U-32	**2RU**	Bantam	D sub 9P(F)×32
RS-422-2U-48	**2RU**	Bantam	D sub 9P(F)×48

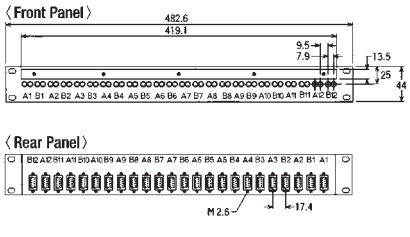
- The RS422 serial signal used for VTR remote applications can now be switched with Bantam patchbay ease.
- D sub screws are M2.6
- Listed above items are other manufacturer's products. Please contact Canare for more information.

RS-422-2U-48

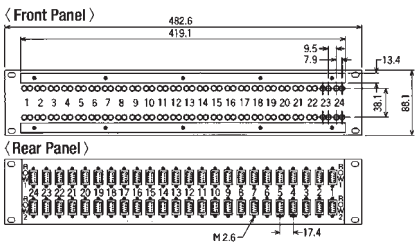


RS422 Patch Cord
(See page 78)





RS-422-1U-24



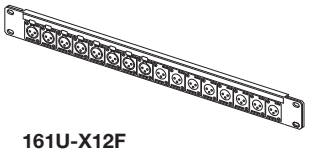
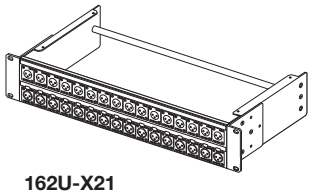
RS-422-2U-48

Pre-Loaded A/V Connector Panels

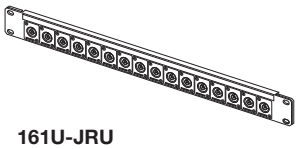
Key Features and Benefits

- Isolated BNC, RCA, F, XLR on same panel
- Clear plastic cover, full screen desi-strip
- Variety of panel options
- Most popular panel holes XLR F-77 and Neutrik D available

■ XLR Connector Panels

Type	Panel Size	Model	Loaded Connector	Panel P/N	Dimensions (mm)
 161U-X12F	1RU	161U-X1F	XLR3-31F77 (16pcs)	1U-AS1	44 x 482.6 x 39.7
		161U-X2F	XLR3-32F77 (16pcs)		44 x 482.6 x 26.6
		161U-X12F	XLR3-31F77 (8pcs, Left) XLR3-32F77 (8pcs, Right)		44 x 482.6 x 39.7
	★	161U-B1	NC3FD-LX-B (16pcs)	1U-AS1D	44 x 482.6 x 31.3
	★	161U-B2	NC3MD-LX-B (16pcs)		44 x 482.6 x 23.6
 162U-X21	2RU	162U-X21	XJ3M-P3FA (16pcs, Upper Row) XJ3F-P3MA (16pcs, Lower Row)	2U-AS7	88.1 x 482.6 x 217
		162U-X22	XJ3M-P3FA (32pcs, 2rows)		

■ BNC Connector Panels

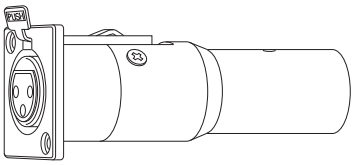
Type	Panel Size	Model	Loaded Connector	Panel P/N	Dimensions (mm)
 161U-JRU	1RU	161U-JRU	BCJ-JRU (16pcs)	1U-AS1	44 x 482.6 x 31.4
	★	161U-JRUDB	BCJ-JRUDB (16pcs)	1U-AS1D	44 x 482.6 x 29.1
	2RU	162U-JRU	BCJ-JRU (32pcs, 2rows)	2U-AS7	88.1 x 482.6 x 217

★Production by order

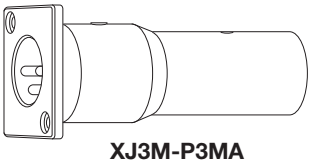
XLR3 Panel Mount Bulkhead Adapters

Model	Description		Flange Type
	Front	Rear	
XJ3M-P3FA	XLR 3pin (M)	XLR 3pin (F)	ITT XLR-F77
XJ3M-P3MA	XLR 3pin (M)	XLR 3pin (M)	
XJ3F-P3FA	XLR 3pin (F)	XLR 3pin (F)	
XJ3F-P3MA	XLR 3pin (F)	XLR 3pin (M)	

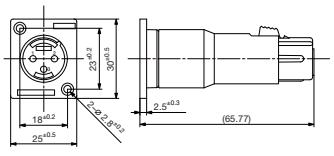
- XJ3 series are XLR3 full compatible.
- XLR jack to jack extremely reduce installation hours.



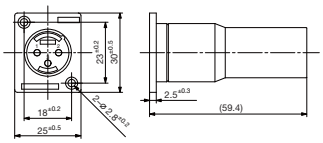
XJ3F-P3MA



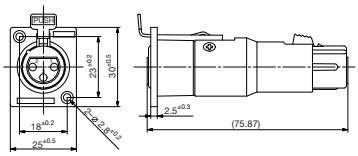
XJ3M-P3MA



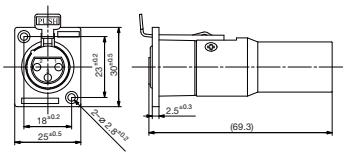
XJ3M-P3FA



XJ3M-P3MA



XJ3F-P3FA



XJ3F-P3MA

Blank Panels

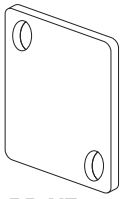
Model	Description
BP-DXF (20pcs)	Snap-on blank panels for both ITT XLR-F77 / Neutrik D holes
BP-XF (10pcs)	Blank panels for ITT XLR-F77 hole with screws
BP-D (10pcs)	Blank panels for Neutrik D hole with screws

BP-DXF

- Easy and quick snap-on mounting without any tools
- Can be used for both ITT XLR-F77 and Neutrik D holes

Note: Panel thickness range: t1.2 to t2.3 mm

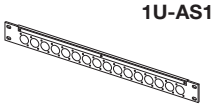
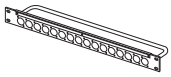
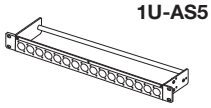
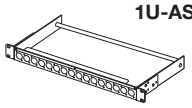
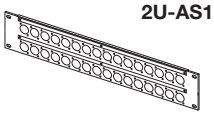
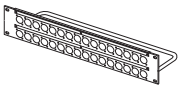
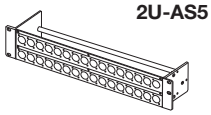
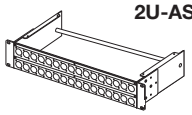
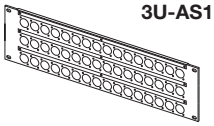
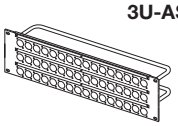
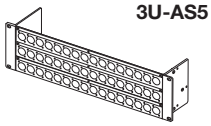
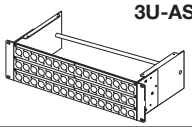
BP-DXF



BP-XF

Custom A/V Connector Panels

■ Individual Panels

Panel Type	AS1 (D)	AS3 (D)	AS5 (D)	AS7 (D)
Description	Flat panel	Flat panel w/cable tie bar	Variable panel w/cable tie bar short type	Variable panel w/cable tie bar Long type
1RU 16 holes x 1 row	1U-AS1 (D) 	1U-AS3 (D) 	1U-AS5 (D) 	1U-AS7 (D) 
Depth (mm)	—	64.8	100	217
2RU 16 holes x 2 rows	2U-AS1 (D) 	2U-AS3 (D) 	2U-AS5 (D) 	2U-AS7 (D) 
Depth (mm)	—	64.8	100	217
3RU 16 holes x 3 rows	3U-AS1 (D) 	3U-AS3 (D) 	3U-AS5 (D) 	3U-AS7 (D) 
Depth (mm)	—	64.8	100	217
A) Rear Panel	N/A	N/A	✓	✓
B) Box Type	N/A	N/A	N/A	✓
C) Recessed	N/A	N/A	✓	✓

Ordering Information

1U	-	AS3	D

Panel Height, Number of holes and Rows

1U	1RU, 16holes, 1row
2U	2RU, 32holes, 2rows
3U	3RU, 48holes, 3rows

Hole Type

Blank	ITT XLR-F77 Type
D	Neutrik D Type

Panel Type

AS1	Flat panel
AS3	Flat panel w/cable tie bar
AS5	Variable panel w/ cable tie bar - short depth
AS7	Variable panel w/ cable tie bar - long depth

■ Connectors Canare Recessed BNC, F, RCA and XLR (ITT XLR-F77 or Neutrik D type) are available.

■ Options

A) Rear Panel A connector panel can be mounted on the rear.

B) Box Type A connector panel, top plate and bottom plate can be mounted on the rear.

C) Recessed The panel can be recessed 25mm by changing the screw positions of the mounting brackets and can be recessed either 50mm or 75mm by changing the mounting brackets to M-MA*U02.

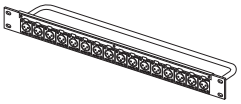
■ Related Products

Type	Size	Model	Color	Standard Package
Mounting Bracket	1RU	M-MA1U02	Black	2 pieces (left and right)
	2RU	M-MA2U02	Black	2 pieces (left and right)
	3RU	M-MA3U02	Black	2 pieces (left and right)

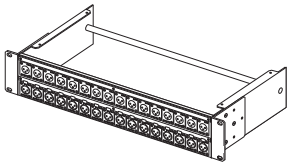
[Supplied with mounting screws]

NOTE:
- Cable tie bars cannot be installed when a rear connector panel is mounted.
- Depending on their length, some connectors can not be mounted on the panel with a cable tie bar installed.

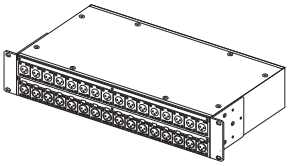
Examples of Custom-Made Connector Panels



1U-AS3 + XLR3-31F77 × 16



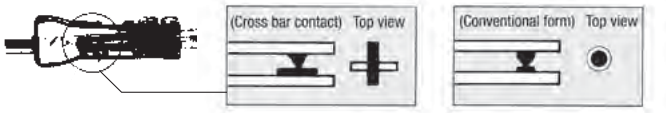
2U-AS7 + XLR3-32F77 × 16
XLR3-31F77 × 16



2U-AS7 (box type)
Connectors can be mounted on the both side.

Audio Patchbays

The gold alloy cross bar contact, which features a low faulty contact rate, is used for the jacks.



● 481U patchbay can be recessed 25mm by changing the screw positions on the mounting brackets.

Model	Description	Connector
481U-820AQ	Bantam Patchbay	820AQ×96

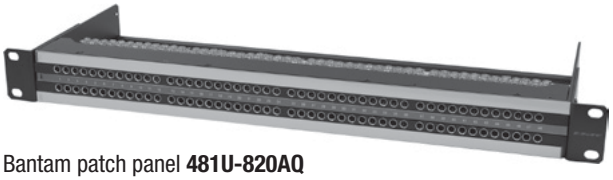
Model	Description	Connector
48-12A/820AQ/EIA	Bantam Patchbay	820AQ×96
32-12A/620A/EIA	Skini Patchbay	620A×64
612A/320A/EIA	Maxi Patchbay	320A×52

● Listed above items are other manufacturer's products. Please contact Canare for more information.

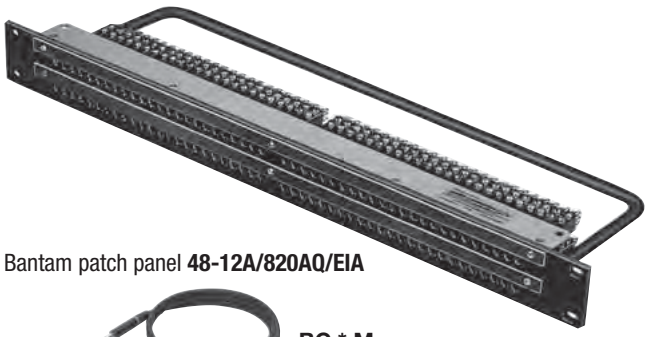
Audio Patchbays Related Products

Model	Description
820AQ	Bantam Jack
PJ748	Bantam Dummy Plug
PJ743	Bantam Terminating Plug (600Ω)
620A	Skini Jack
320A	Maxi Jack
NP3TMC-B	Maxi/Skini Plug
PH50-A	Patch Cord Holder (for Maxi/Skini, Video)
PH50-B	Patch Cord Holder (for Bantam)
6000AQ	Polysand 286x150mm (for PJ743)
ABJ-DC	Bantam Jack Dust Cap (100pcs/pkg)

● Listed above items are other manufacturer's products. Please contact Canare for more information.

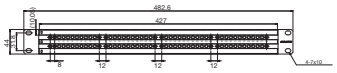


Bantam patch panel **481U-820AQ**



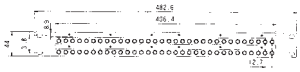
Bantam patch panel **48-12A/820AQ/EIA**

BC * M
(See page 77 for patch cords.)



481U-820AQ

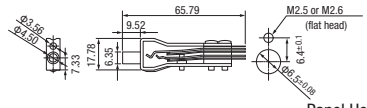
48-12A/820AQ/EIA



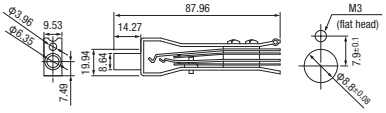
32-12A/620A/EIA

612A/320A/EIA

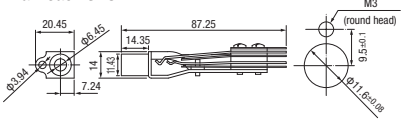
Bantam Jack **820AQ**



Skini Jack **620A**



Maxi Jack **320A**



Patch Cord Holder

Capable up to 50 patch cords.
Easy to install on the wall or side of rack.
PH50-A
for Maxi/Skini, Video cords.
PH50-B
for Bantam cords.

Polysand 6000AQ (for PJ743)

Quickly and effectively removes oxide on brass plugs.
Comes in 286x150mm size.

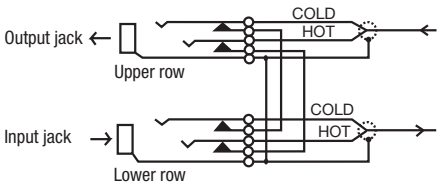
Technical Note

Audio Patchbay Normaling Descriptions

Output from a device is obtained from the upper row, while input to a device is normally connected to the lower row. Users can select from the following three types of connecting functions.

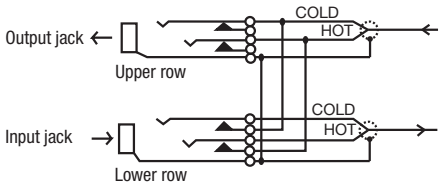
<Wiring formats connecting upper and lower connectors>

F: Full normal connection



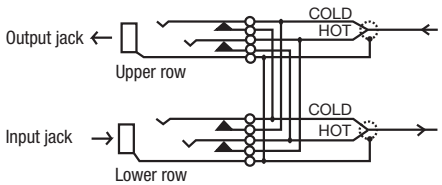
Full Normal Format (series)
The upper (output) row is connected to the lower row (input) in the state when a plug is not inserted.
When a plug is inserted in the upper jack to obtain a signal, the signal is not connected to the lower jack. A signal can be entered by inserting a plug in the lower jack. In this case the signal is not connected to the upper jack.

H: Half normal connection



Half Normal Format (half-parallel)
The upper (output) row is connected to the lower row (input) in the state when a plug is not inserted.
When a plug is inserted in the upper jack to obtain a signal, the signal is connected to the lower jack. This format allows the signal to be obtained in parallel. The signal can be prevented from going to the lower jack by inserting a dummy plug.
Signals are input by inserting a plug in the lower jack. In this case the signal is not connected to the upper jack.

W: Double normal connection



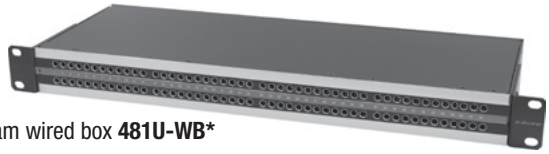
Double Normal Format (series-parallel)
The upper (output) row is connected to the lower row (input) in the state when a plug is not inserted.
When a plug is inserted in the upper jack to obtain a signal, the signal is connected to the lower jack. This format allows the signal to be obtained in parallel. The signal can be prevented from going to the lower jack by inserting a dummy plug.
A signal can be entered by inserting another plug in the lower jack. Note that the signal in this case is connected to the upper jack.
This can be prevented by inserting a dummy plug.

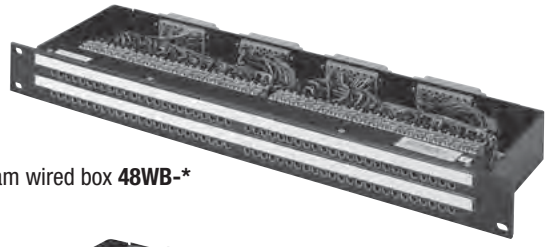
■ Wired Box

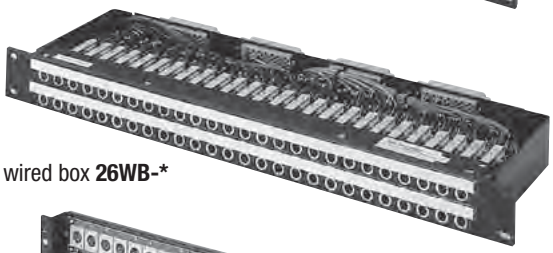
Type	Model	Size	Connector	
			Front	Rear
Bantam	481U-WBF	1RU	820AQ × 96	90-602 × 4
	481U-WBH	1RU	820AQ × 96	90-602 × 4
	481U-WBW	1RU	820AQ × 96	90-602 × 4
	481U-WBS	1RU	820AQ × 96	90-602 × 4
	48WB-F	1RU	820AQ × 96	90-602 × 4
	48WB-H	1RU	820AQ × 96	90-602 × 4
	48WB-W	1RU	820AQ × 96	90-602 × 4
Skini	32WB-F	1RU	620A × 64	90-602 × 4
	32WB-H	1RU	620A × 64	90-602 × 4
	32WB-W	1RU	620A × 64	90-602 × 4
Maxi	26WB-F	1RU	320A × 52	90-602 × 4
	26WB-H	1RU	320A × 52	90-602 × 4
	26WB-W	1RU	320A × 52	90-602 × 4

481U-WB can be recessed 25mm
*90-602 connector is identical to
ELCO 00-8016-090-***-702V connector

90-602


Bantam wired box **481U-WB***

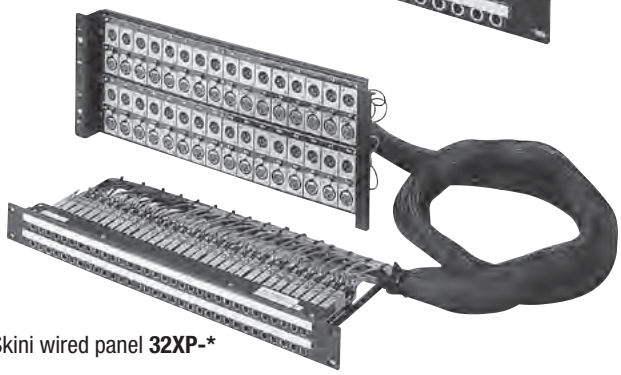

Bantam wired box **48WB-***


Maxi wired box **26WB-***

■ Wired Panels

Type	Model	Panel 1		Panel 2	
		Size	Connector	Size	Connector
Bantam	48XP-F	1RU	820AQ × 96	3RU × 2	XLR3-31F77 × 48 XLR3-32F77 × 48
	48XP-H	1RU	820AQ × 96	3RU × 2	XLR3-31F77 × 48 XLR3-32F77 × 48
	48XP-W	1RU	820AQ × 96	3RU × 2	XLR3-31F77 × 48 XLR3-32F77 × 48
Skini	32XP-F	1RU	620A × 64	4RU	XLR3-31F77 × 32 XLR3-32F77 × 32
	32XP-H	1RU	620A × 64	4RU	XLR3-31F77 × 32 XLR3-32F77 × 32
	32XP-W	1RU	620A × 64	4RU	XLR3-31F77 × 32 XLR3-32F77 × 32

*Cables are 2 meters in length.


Skini wired panel **32XP-***

Normaling Options

481U-WB*
48WB-*
48XP-*
- F: Full normal
- H: Half normal
- W: Double normal
- S: Single (No normal)


TCB**
(See page 77 for patch cords)

90-602 Connector Format (Wired box)
<Rear panel>

4	3	2	1

Bantam	Lower row 25~48ch	Upper row 25~48ch	Lower row 1~24ch	Upper row 1~24ch
Skini	Lower row 17~32ch	Upper row 17~32ch	Lower row 1~16ch	Upper row 1~16ch
Maxi	Lower row 14~26ch	Upper row 14~26ch	Lower row 1~13ch	Upper row 1~13ch

90-602 connector is mated with 90-608 connector.
90-608 requires either 125 or 525 contact and 90-T cover for assembling.

<Wired box side>
90-602
(00-8016-090-000-702V) ←→

<Cable side>
90-608 (00-8016-090-000-708V)
- Contact
  - **125** : Solder type (60-8016-0513-00-339)
  - **525** : Crimp type (60-8016-0313-00-339)
- Cover — **90-T** : Top entrance (30-8016-090-T)

*The numbers in parentheses are ELCO ordering codes.
** Contact extraction tool: 06-1877-04.
Crimping pliers for 525: 06-1001-015 (AWG#18), 06-1001-016 (AWG#20-#22), 06-1001-017 (AWG#24-#26).

Wiring Table for 90-602

Channel no.	Maxi		Skini		Bantam		HOT	COLD	SHIELD
	1	14	1	17	1	25	A	H	R
	2	15	2	18	2	26	B	J	S
	3	16	3	19	3	27	C	K	T
	4	17	4	20	4	28	D	L	U
	5	18	5	21	5	29	E	M	V
	6	19	6	22	6	30	F	N	W
	7	20	7	23	7	31	X	AE	AM
	8	21	8	24	8	32	Y	AF	AN
	9	22	9	25	9	33	Z	AH	AP
	10	23	10	26	10	34	AA	AJ	AR
	11	24	11	27	11	35	AB	AK	AS
	12	25	12	28	12	36	AC	AL	AT
	13	26	13	29	13	37	BJ	BS	BY
			14	30	14	38	BK	BT	BZ
			15	31	15	39	BL	BU	CA
			16	32	16	40	BM	BV	CB
					17	41	BN	BW	CC
					18	42	BP	BX	CD
					19	43	CF	CN	CW
					20	44	CH	CP	CX
					21	45	CJ	CR	CY
					22	46	CK	CS	CZ
					23	47	CL	CT	DA
					24	48	CM	CU	DB

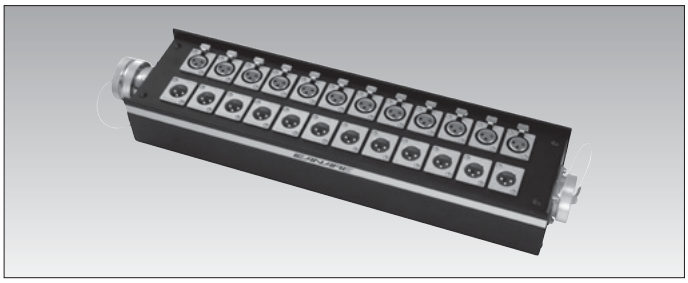
■ Snake Trunk

12	C30	-	E3

Ch. count
8, 12, 16, 24, 32

Cable length
C10=10m
C30=30m
C50=50m

Type of multichannel cable
E3=L-4E3 series
M2=M202 series



■ Junction Box

12	J12	N	12

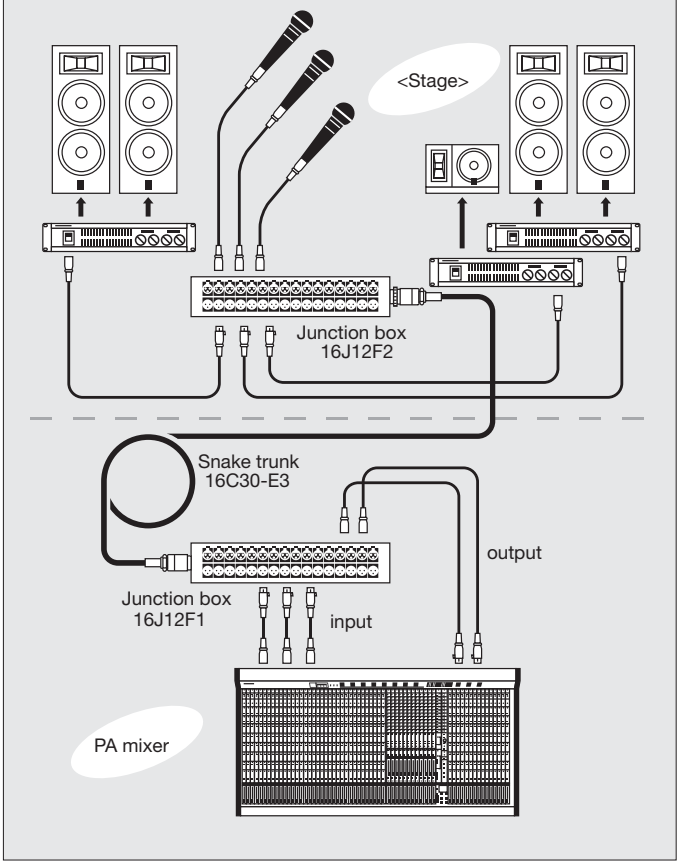
Ch. count
8, 12, 16, 24, 32

Cannon connectors
B1=female only
B2=male only
J12=male, female, parallel wired

Multichannel connector format
1=female
2=male
12=female and male

Type of multichannel connectors
N=NK type, F=FK type
MS=MS type

■ System Example



■ Fantail

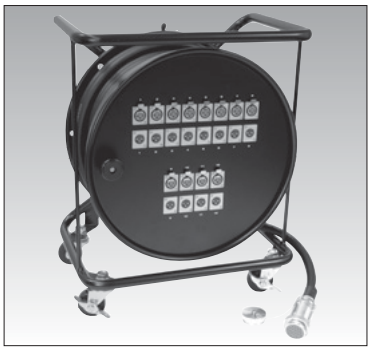
12	S2	N	1

Ch. count
8, 12, 16, 24, 32

Cannon connectors
S1=female
S2=male

Multichannel connector
1=female
2=male

Type of multichannel connectors
N=NK type
F=FK type
MS=MS type



■ Cable Reel Snake

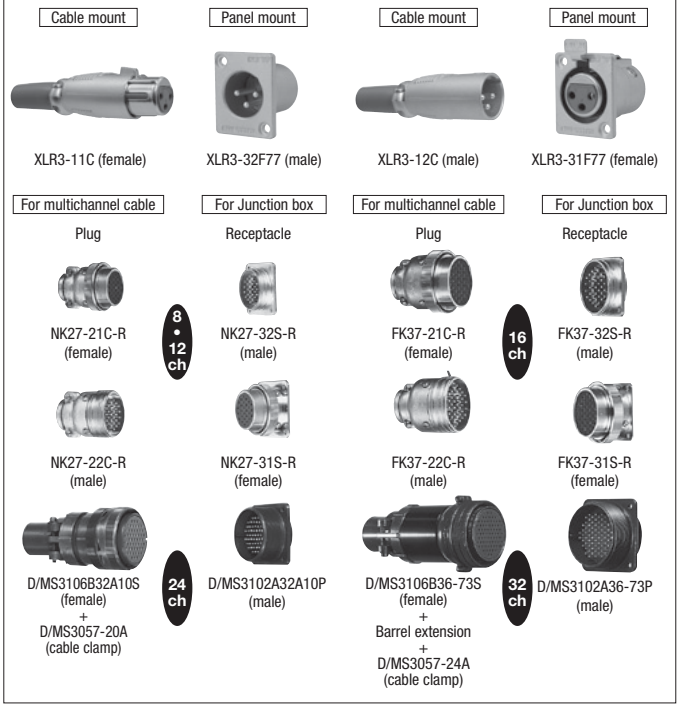
12	R30	-	E3

Ch. count
8, 12, 16, 24,

Cable length
R30=30m
R50=50m

Type of cable
E3=L-4E3 series
• Panel contains both male and female XLR connectors parallel wired

■ Connectors Used With Canare Multichannel Cable System



Snake Trunks

Cable Reel Snakes

8 CH

L-4E3
Star quad, Braided shield

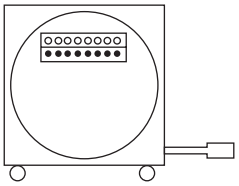
connector : NK27-21C 3/4-R, NK27-22C 3/4-R
cable : L-4E3-8P (black)
rubber bushing : AN3420-12 + Heat Shrink Tube

Model	Length	Weight
8C05-E3	5m	1.6kg
8C10-E3	10m	3.0kg
8C30-E3	30m	8.4kg
8C50-E3	50m	13.8kg

M2
Two-cord, AT shield

connector : NK27-21C 3/4-R, NK27-22C 3/4-R
cable : M202-8AT (black)
rubber bushing : AN3420-10, 12 + Heat Shrink Tube

Model	Length	Weight
8C10-M2	10m	1.7kg
8C30-M2	30m	4.5kg
8C50-M2	50m	7.3kg



connector : NK27-21C-3/4-R
cable : L-4E3-8P (black)

Model	Length	Weight	Cable reel
8R30-E3	30m	18.1kg	R380
8R50-E3	50m	23.0kg	R380

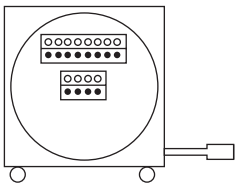
12 CH

connector : NK27-21C 7/8-R, NK27-22C 7/8-R
cable : L-4E3-12P (black)
rubber bushing : AN3420-16

Model	Length	Weight
12C05-E3	5m	2.1kg
12C10-E3	10m	3.9kg
12C30-E3	30m	11.1kg
12C50-E3	50m	18.3kg

connector : NK27-21C 3/4-R, NK27-22C 3/4-R
cable : M202-12AT (black)
rubber bushing : AN3420-10, 12 + Heat Shrink Tube

Model	Length	Weight
12C10-M2	10m	2.1kg
12C30-M2	30m	5.8kg
12C50-M2	50m	9.3kg



connector : NK27-21C-7/8-R
cable : L-4E3-12P (black)

Model	Length	Weight	Cable reel
12R30-E3	30m	20.6kg	R380
12R50-E3	50m	30.4kg	R460

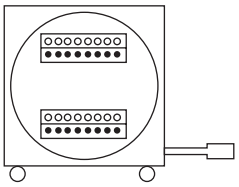
16 CH

connector : FK37-21C 7/8-R, FK37-22C 7/8-R
cable : L-4E3-16P (black)
rubber bushing : AN3420-16

Model	Length	Weight
16C05-E3	5m	2.6kg
16C10-E3	10m	4.9kg
16C30-E3	30m	14.1kg
16C50-E3	50m	23.3kg

connector : FK37-21C 7/8-R, FK37-22C 7/8-R
cable : M202-16AT (black)
rubber bushing : AN3420-10, 12, 16

Model	Length	Weight
16C10-M2	10m	2.7kg
16C30-M2	30m	7.5kg
16C50-M2	50m	12.3kg



connector : FK37-21C-7/8-R
cable : L-4E3-16P (black)

Model	Length	Weight	Cable reel
16R30-E3	30m	24.1kg	R380
16R50-E3	50m	36.1kg	R460

24 CH

connector : 〈D/MS3106B-32A10S+D/MS3057-20A〉×2
cable : L-4E3-24P (black)
rubber bushing : AN3420-20

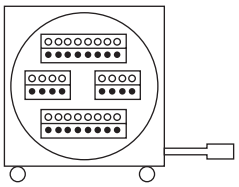
Model	Length	Weight
24C05-E3	5m	4.3kg
24C10-E3	10m	7.7kg
24C30-E3	30m	21.7kg
24C50-E3	50m	35.7kg

Extension Cord 〈D/MS3101A32A10P+D/MS3057-20A〉X 2
Cable:L-4E3-24P (black)

★ 24C005-E3MS22

connector : 〈D/MS3106B-32A10S+D/MS3057-20A〉×2
cable : M202-24AT (black)
rubber bushing : AN3420-16, 20 + Heat Shrink Tube

Model	Length	Weight
24C10-M2	10m	4.0kg
24C30-M2	30m	10.4kg
24C50-M2	50m	16.8kg



connector : D/MS3106B-32A10S
cable : L-4E3-24P (black)

Model	Length	Weight	Cable reel
24R30-E3	30m	34.6kg	R460

32 CH

connector : 〈D/MS3106B36-73S+D/MS3057-24A〉×2
cable : M202-32AT (black)
rubber bushing : AN3420-16, 20, 24

Model	Length	Weight
32C10-M2	10m	4.8kg
32C30-M2	30m	13.1kg
32C50-M2	50m	21.0kg

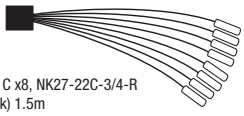
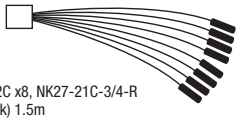
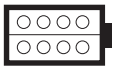
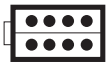
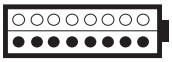
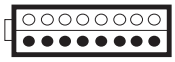
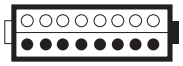
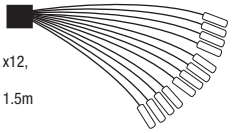
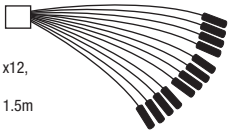
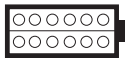
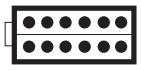
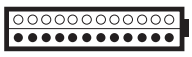
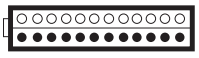
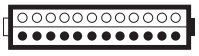
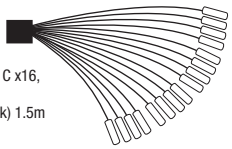
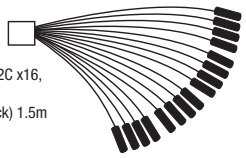
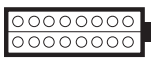
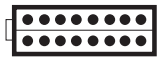
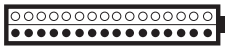
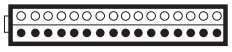
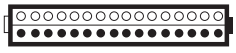
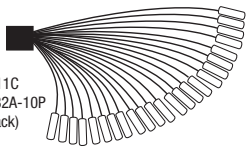
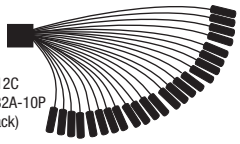
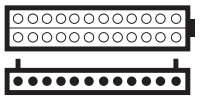
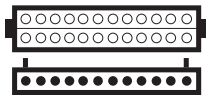
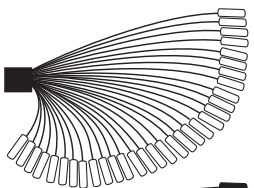
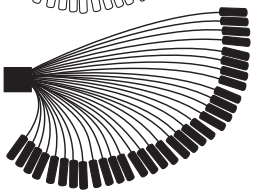
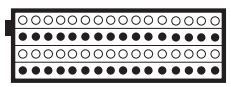
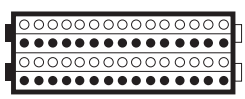
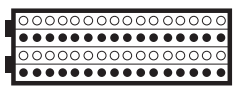
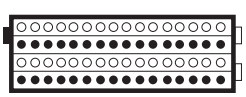
Extension Cord

connector : 〈D/MS3101A36-73P+D/MS3057-24A〉×2
cable : M202-32AT (black)

★ 32C005-M2MS22

□ ○ : Female
■ ● : Male

Note: Connecting cables 24C005-E3MS22 and 32C005-M2MS22 are to be used to interconnect snake trunks only and they do not mate with our other standard snake system. ★Production by order

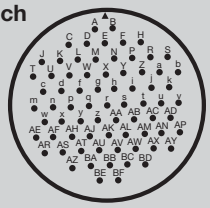
Fantails	Junction Boxes		
	Single XLR per channel	Parallel XLR per channel	Parallel XLR per channel MultiPin feed through
 **8S1N2** Connector : XLR3-11C x8, NK27-22C-3/4-R Cable : L-4E6S (black) 1.5m Weight : 1.1kg  **8S2N1** Connector : XLR3-12C x8, NK27-21C-3/4-R Cable : L-4E6S (black) 1.5m Weight : 1.0kg	 **8B1N2** Connector: XLR3-31F77 x8, NK27-32S-R x1 Weight : 0.9kg  **8B2N1** Connector: XLR3-32F77 x8, NK27-31S-R x1 Weight : 1.1kg	 **8J12N2** Connector: XLR3-31F77 x8, XLR3-32F77 x8 NK27-32S-R x1 Weight : 1.5kg  **8J12N1** Connector: XLR3-31F77 x8, XLR3-32F77 x8 NK27-31S-R x1 Weight : 1.5kg	 **8J12N12** Connector: XLR3-31F77 x8, XLR3-32F77 x8 NK27-31S-R x1, NK27-32S-R x1 Weight : 1.6kg
 **12S1N2** Connector : XLR3-11C x12, NK27-22C-3/4-R Cable : L-4E5C (black) 1.5m Weight : 1.4kg  **12S2N1** Connector : XLR3-12C x12, NK27-21C-3/4-R Cable : L-4E5C (black) 1.5m Weight : 1.3kg	 **12B1N2** Connector: XLR3-31F77 x12, NK27-32S-R x1 Weight : 1.3kg  **12B2N1** Connector: XLR3-32F77 x12, NK27-31S-R x1 Weight : 1.2kg	 **12J12N2** Connector: XLR3-31F77 x12, XLR3-32F77 x12 NK27-32S-R x1 Weight : 2.1kg  **12J12N1** Connector: XLR3-31F77 x12, XLR3-32F77 x12 NK27-31S-R x1 Weight : 2.1kg	 **12J12N12** Connector: XLR3-31F77 x12, XLR3-32F77 x12 NK27-31S-R x1, NK27-32S-R x1 Weight : 2.2kg
 **16S1F2** Connector : XLR3-11C x16, FK37-22C-7/8-R Cable : L-4E5C (black) 1.5m Weight : 1.9kg  **16S2F1** Connector : XLR3-12C x16, FK37-21C-7/8-R Cable : L-4E5C (black) 1.5m Weight : 1.7kg	 **16B1F2** Connector: XLR3-31F77 x16, FK37-32S-R x1 Weight : 1.6kg  **16B2F1** Connector: XLR3-32F77 x16, FK37-31S-R x1 Weight : 1.3kg	 **16J12F2** Connector: XLR3-31F77 x16, XLR3-32F77 x16 FK37-32S-R x1 Weight : 2.5kg  **16J12F1** Connector: XLR3-31F77 x16, XLR3-32F77 x16 FK37-31S-R x1 Weight : 2.5kg	 **16J12F12** Connector: XLR3-31F77 x16, XLR3-32F77 x16 FK37-31S-R x1, FK37-32S-R x1 Weight : 2.6kg
★ **24S1MS2** Connector : XLR3-11C x24, D/MS3101A-32A-10P Cable : L-4E5C (black) 2m  ★ **24S2MS2** Connector : XLR3-12C x24, D/MS3101A-32A-10P Cable : L-4E5C (black) 2m 		 **24B12MS** Connector: XLR3-31F77 x24 (on top) XLR3-32F77 x24 (12 on each side) D/MS3102A-32A10P Weight : 2.7kg	 **24B12MSW** Connector: XLR3-31F77 x24 (on top) XLR3-32F77 x24 (12 on each side) D/MS3102A-32A10P x2 Weight : 3.0kg
★ **32S1MS2** Connector : XLR3-11C x32, D/MS3101A-36- 73P Cable : L-4E5C (black) 2m  ★ **32S2MS2** Connector : XLR3-12C x32, D/MS3101A-36- 73P Cable : L-4E5C (black) 2m 		 **32B12MS** Connector: XLR3-31F77 x32, XLR3-32F77 x32 D/MS3102A36-73P Weight : 5.3kg  **32B12MWF11** Connector: XLR3-31F77 x32, XLR3-32F77 x32 D/MS3102A36-73P x2, FK37-31S-R x2 Weight : 6.0kg	 **32B12MSW** Connector: XLR3-31F77 x32, XLR3-32F77 x32 D/MS3102A36-73P x2 Weight : 5.5kg  **32B12MF11** Connector: XLR3-31F77 x32, XLR3-32F77 x32 D/MS3102A36-73P x1, FK37-31S-R x2 Weight : 5.7kg

★Production by order

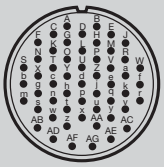
Multichannel Connector Pin Assignments

Ch No.	Cable Unit Identification				32ch		24ch		16ch		8ch • 12ch	
	L-4E3	M202			D/MS3102A36-73 D/MS3106B36-73		D/MS3102A32A-10 D/MS3106B32A-10		FK37		NK27	
	Spiral Marker Color	Insulator Color										
		Identifying Color	•	Common identifying Color	HOT	COLD	HOT	COLD	HOT	COLD	HOT	COLD
1	RED	RED	•	WHT	A	B	A	B	1	2	1	3
2	BLU	BLU	•		C	D	C	D	3	4	4	5
3	YEL	YEL	•		F	H	F	G	5	6	6	7
4	GRN	GRN	•		J	K	H	J	8	9	8	9
5	BRN	BRN	•		L	M	K	L	10	11	11	12
6	N/A	GRY	•	▼	N	P	N	O	12	13	13	14
7	BLU • BLK	BLU	•	BLK	R	S	P	R	14	15	15	16
8	YEL • BLK	YEL	•		T	U	S	T	16	17	17	18
9	GRN • BLK	GRN	•		V	W	U	V	21	22	19	20
10	BRN • BLK	BRN	•		Y	Z	X	Y	23	24	22	23
11	BLK	GRY	•	▼	a	b	Z	a	25	26	24	25
12	BLU • ORN	BLU	•	ORN	c	d	b	c	27	28	26	27
13	YEL • ORN	YEL	•		f	g	d	e	29	30	SHIELD	
14	GRN • ORN	GRN	•		h	i	g	h	32	33	10	
15	BRN • ORN	BRN	•		j	k	j	k	34	35		
16	ORN	GRY	•	▼	m	n	m	n	36	37		
17	BLU • PNK	BLU	•	PNK	u	v	p	q	SHIELD			
18	YEL • PNK	YEL	•		w	x	s	t	19			
19	GRN • PNK	GRN	•		y	z	u	v				
20	BRN • PNK	BRN	•		AA	AB	w	x				
21	PNK	GRY	•	▼	AC	AD	AB	z				
22	BLU • WHT	BLU	•	RED	AE	AF	AA	AC				
23	YEL • WHT	YEL	•		AH	AJ	AD	AF				
24	GRN • WHT	GRN	•		AL	AM	AG	AE				
25	—	BRN	•		AN	AP	SHIELD					
26	—	GRY	•	▼	AR	AS	E					
27	—	YEL	•	BLU	AT	AU						
28	—	GRN	•		AV	AW						
29	—	BRN	•	▼	AX	AY						
30	—	GRN	•	YEL	AZ	BA						
31	—	BRN	•		BC	BD						
32	—	GRY	•	▼	BE	BF						
					SHIELD							
					E	q	t					
					X	r	AK					
					p	s	BB					

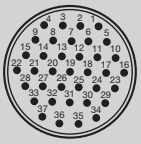
32ch



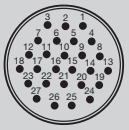
24ch



16ch

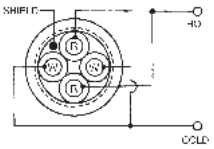


8-12ch



■ Connection Method

L-4E3 Types:
Identify the channel number by the color of the spiral marker on the inner jacket (gray). The unit is 4-core construction and the insulator colors are blue, blue, white, and white. Connect these with the same colored cores, so that the blue cores are connected to Hot and the white cores to Cold.



M202 Types:
The unit is 2-core construction, with the channel number identified by the insulator color (a combination of the identifying color and common identifying color). Connect the identifying color core to Hot, and the common identifying color core to Cold.

■ Connections to XLR Connectors

Polarity	HOT	COLD	SHIELD
Pin No.	2	3	1

Cable Reels

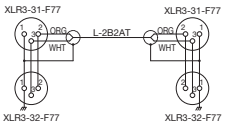
Plain reels for winding cable

Model	Weight (kg)	Description	Stackability
R460-S	9.9	Reel unit for cable winding / With caster.	N/A
R380-S	8.3	Reel unit for cable winding / With caster.	N/A
R300-S	4.3	Reel unit for cable winding.	✓
R300	4.3	Front panel can be refurbished to create connector mounting holes.	✓
R300-L	4.3	Both front panel and drum can be refurbished to create connector mounting holes.	✓
R300-CN	4.3	Both panel and drum have 2 XLR connectors (one male, one female) installed.	✓
R300-BN	4.3	Both panel and drum have BNC receptacles (one each).	✓

- 3-position brake force adjustment. (Lock/Soft/Free)
- Non-lubricated bearings.
- Rugged E frame design.

R460-S

Wiring



R300-CN

R300-BN

3-position brake

R300-S

Reel with Cable Assembly

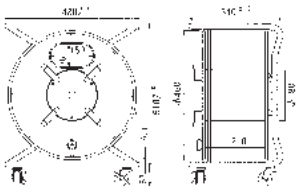
Cable detachable type.

Model	Description			Weight (kg)
	Cable reel	Cable Assemblies		
		Set at inner end / Cable / Set at outer end		
CR100-CN	R300-CN	XLR3-12C	L-4E6S(100m) XLR3-11C	9.6
CR100-S	R300-S	XLR3-12C	L-4E6S(100m) XLR3-11C	9.6
CR90-BN	R300-BN	BCP-H5B	L-5C2VS(90m) BCP-H5B	10.5

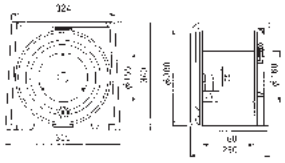
Equipped with brake

CR100-CN (with 100m cable)
L-4E6S (EC100) bundled with R300-CN.
(Set with XLR3-11C at the cable outer end when sold.)

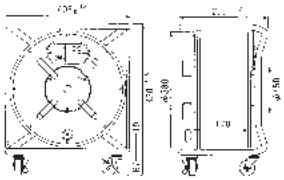
Dimensions



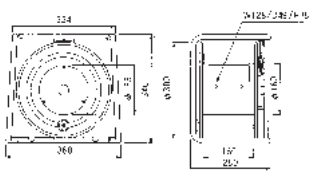
R460-S



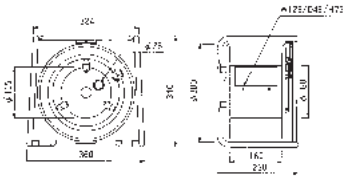
R300
(Connectors can be attached to the front panel)



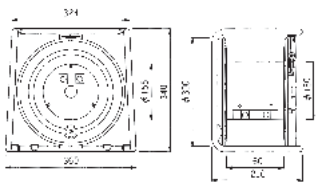
R380-S



R300-L
(Connectors can be attached to the front panel and the drum)

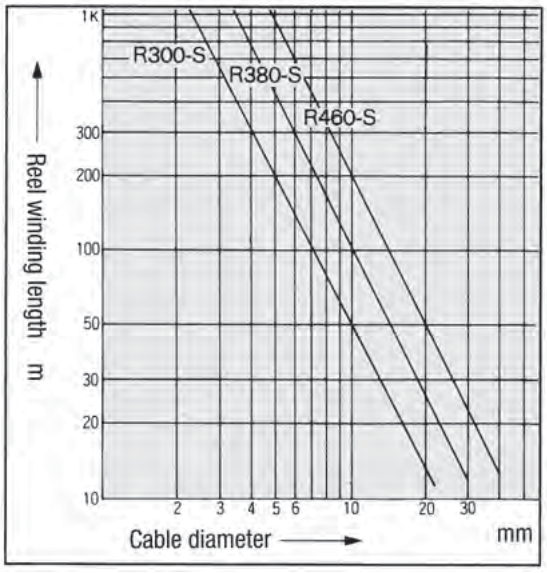


R300-S



R300-CN
(R300-BN comes with BNC receptacles)

Cable winding length reference chart



<Wind length conversion formula>

R300-S (S, L, CN) $L = \frac{8448}{D^2} \times 0.6$ (m)

R460-S $L = \frac{33852}{D^2} \times 0.6$ (m)

R380-S $L = \frac{18207}{D^2} \times 0.6$ (m)

D: Cable outer diameter (mm)
L: wind length

BNC

- High quality and reliable Canare assemblies are ideal for any interconnection including broadcast, professional A/V, and telecommunication.
- Custom assembly configurations can be special ordered at affordable cost and quick lead-time.

BNC

Cables for use with 75Ω BNC connectors.

Type	Model	Length (m)
BNC (M) – BNC (M) Crimp BCP-A3 — L-3C2VS — BCP-A3 L BLK ★ BRN ★ RED ★ ORN ★ YEL ★ GRE ★ BLU ★ GRY ★ WHT	D3C005A-S	0.5
	D3C01A-S	1
	D3C02A-S	2
	D3C03A-S	3
	D3C05A-S	5
	D3C10A-S	10
BNC (M) – BNC (M) Crimp BCP-A5 — L-5C2VS — BCP-A5 L BLK ★ BRN ★ RED ★ ORN ★ YEL ★ GRE ★ BLU ★ GRY ★ WHT	D5C005A-S	0.5
	D5C01A-S	1
	D5C015A-S	1.5
	D5C03A-S	3
	D5C05A-S	5
	D5C10A-S	10
	D5C15A-S	15
	D5C20A-S	20
BNC(M) – BNC(M) Crimp NEW BCP-B25HD — L-2.5CHD — BCP-B25HD L BLK ★ RED ★ YEL ★ GRE ★ BLU ★ GRY ★ WHT	★ D2.5HDC005E	0.5
	★ D2.5HDC01E	1
	★ D2.5HDC015E	1.5
	★ D2.5HDC02E	2
	★ D2.5HDC03E	3
	★ D2.5HDC05E	5
	★ D2.5HDC10E	10
BNC(M) – BNC(M) Crimp NEW BCP-B53 — L-4.5CHD — BCP-B53 L BLK ★ BRN ★ RED ★ ORN ★ YEL ★ GRE ★ BLU ★ PPL ★ GRY ★ WHT	★ D4.5HDC03E	3
	★ D4.5HDC05E	5
	★ D4.5HDC10E	10
	★ D4.5HDC15E	15
	★ D4.5HDC20E	20
BNC(M) – DIN(M) Crimp NEW BCP-B25HD — L-2.5CHD — DCP-C25HD L BLK ★ RED ★ YEL ★ GRE ★ BLU ★ GRY ★ WHT	★ D2.5HDC005E-D	0.5
	★ D2.5HDC01E-D	1
	★ D2.5HDC015E-D	1.5
	★ D2.5HDC02E-D	2
	★ D2.5HDC03E-D	3
	★ D2.5HDC05E-D	5
	★ D2.5HDC10E-D	10
BNC(M) - DIN(M) Crimp NEW BCP-B53 — L-4.5CHD — DCP-C53 L BLK ★ BRN ★ RED ★ ORN ★ YEL ★ GRE ★ BLU ★ PPL ★ GRY ★ WHT	★ D4.5HDC03E-D	3
	★ D4.5HDC05E-D	5
	★ D4.5HDC10E-D	10
	★ D4.5HDC15E-D	15
	★ D4.5HDC20E-D	20
BNC (M) – RCA (M) BCP-A3 — L-3C2VS — F-09 L BLK ★ BRN ★ RED ★ ORN ★ YEL ★ GRE ★ BLU ★ GRY ★ WHT	D3C01A-SR	1
	D3C03A-SR	3
	D3C05A-SR	5

BNC (Multi)

These 75Ω coaxial multi-cables reduce the correction work of phase shift caused by different cable lengths.

Type	Model	Length (m)
BNC (M) – BNC (M) (3C2VS unit) BCP-VA3 — V3-3C — BCP-VA3 30cm (15cm) — L — 30cm (15cm) BLK	3VS01A-3C	1
	3VS02A-3C	2
	3VS03A-3C	3
	3VS05A-3C	5
	3VS08A-3C	8
	3VS10A-3C	10
BCP-VA3 — V4-3C — BCP-VA3 30cm (15cm) — L — 30cm (15cm) BLK	4VS01A-3C	1
	4VS02A-3C	2
	4VS03A-3C	3
	4VS05A-3C	5
	4VS08A-3C	8
	4VS10A-3C	10
BCP-VA3 — V5-3C — BCP-VA3 30cm (15cm) — L — 30cm (15cm) BLK	5VS01A-3C	1
	5VS02A-3C	2
	5VS03A-3C	3
	5VS05A-3C	5
	5VS08A-3C	8
	5VS10A-3C	10
	5VS15A-3C	15
	5VS20A-3C	20
	5VS30A-3C	30
BNC (M) – BNC (M) (5C2VS unit) BCP-VA5 — V3-5C — BCP-VA5 30cm — L — 30cm BLK	3VS03A-5C	3
	3VS05A-5C	5
	★ 3VS08A-5C	8
	3VS10A-5C	10
	★ 3VS15A-5C	15
	3VS20A-5C	20
BCP-VA5 — V4-5C — BCP-VA5 30cm — L — 30cm BLK	4VS03A-5C	3
	4VS05A-5C	5
	4VS08A-5C	8
	4VS10A-5C	10
	★ 4VS15A-5C	15
	★ 4VS20A-5C	20
BCP-VA5 — V5-5C — BCP-VA5 30cm — L — 30cm BLK	5VS03A-5C	3
	5VS05A-5C	5
	5VS08A-5C	8
	5VS10A-5C	10
	5VS15A-5C	15
	5VS20A-5C	20
	5VS30A-5C	30

Lengths in brackets indicate that of 1m cable assembly.

★ Marked models and colors are production by order.

DIN NEW

Type	Model	Length (m)
DIN(M) - DIN(M) Crimp ★	DN2.5HDC005	0.5
	DN2.5HDC01	1
DCP-C25HD L-2.5CHD DCP-C25HD L	DN2.5HDC015	1.5
	DN2.5HDC02	2
	DN2.5HDC03	3
	DN2.5HDC05	5
BLK ★ RED ★ YEL ★ GRE ★ BLU ★ GRY ★ WHT	DN2.5HDC10	10
BNC(M) - BNC(M) Crimp ★	DN4.5HDC03	3
DCP-C53 L-4.5CHD DCP-C53 L	DN4.5HDC05	5
	DN4.5HDC10	10
	DN4.5HDC15	15
BLK ★ BRN ★ RED ★ ORN ★ YEL ★ GRE ★ BLU ★ PPL ★ GRY ★ WHT	DN4.5HDC20	20

DN2.5HDC

RCA (Video)

Type	Model	Length (m)
RCA (M) – RCA (M) Solder	DRC01-S	1
F-09 L-3C2VS F-09 L	DRC03-S	3
BLK ★ BRN ★ RED ★ ORN ★ YEL ★ GRE ★ BLU ★ GRY ★ WHT	DRC05-S	5
RCA (M) – RCA (M) Crimp	DRC10-F3	10
RCAP-C3F L-3CFB RCAP-C3F L	DRC15-F3	15
	DRC20-F3	20
	DRC30-F3	30
BLK ★ RED ★ YEL ★ GRE ★ BLU ★ WHT ★	DRC40-F3	40

RCA (Multi)

Color difference signal input/output cables feature 3CFB cable units to ensure superior transmission characteristics.

Type	Model	Length (m)
RCA (M) – RCA (M) ★	3VS02-3CFB-RCAP	2
★	3VS03-3CFB-RCAP	3
RCAP-C3F V3-3CFB RCAP-C3F 30cm L 30cm	3VS05-3CFB-RCAP	5
	3VS10-3CFB-RCAP	10
	3VS15-3CFB-RCAP	15
BLK ★	3VS20-3CFB-RCAP	20
RCA (M) – RCA (M) Crimp ★	5VS02-3CFB-RCAP	2
RCAP-C3F V5-3CFB RCAP-C3F ★	5VS03-3CFB-RCAP	3
★	5VS05-3CFB-RCAP	5
★	5VS10-3CFB-RCAP	10
30cm L 30cm ★	5VS15-3CFB-RCAP	15
BLK ★	5VS20-3CFB-RCAP	20

Triax

Cables used for connections such as those between broadcast cameras and CCUs.

Type	Model	Length (m)
Triaxial(F) – Triaxial(M) ★	TXC10-K	10
U.S. preferred type ★	TXC20-K	20
CCF4-JK + CB23 CCM4-PK + CB22 ★	TXC30-K	30
L-4CFTX ★	TXC50-K	50
★	TXC100-K	100
★	TXC150-K	150
RED ★	TXC200-K	200
Triaxial(F) – Triaxial(M) ★	TXC10-F	10
EU preferred type ★	TXC20-F	20
CCF5-JFC + CB31 CCM5-PFC + CB32 ★	TXC30-F	30
L-5CFTX ★	TXC50-F	50
★	TXC100-F	100
★	TXC150-F	150
BLK ★ RED ★ GRE ★	TXC200-F	200

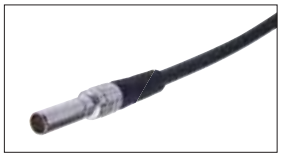
Video Patch (W.E. standard)

Type	Model	Length (m)
Video Patch (M) – Video Patch (M)	VPC003-WC	0.3
VWP-C4A LV-61S VWP-C4A L	VPC005-WC	0.5
BLK ★ BRN ★ RED ★ ORN ★ YEL ★ GRE ★ BLU ★ PPL ★ GRY ★ WHT	VPC01-WC	1

VPC003-WC

Mini-WECO Video Patch

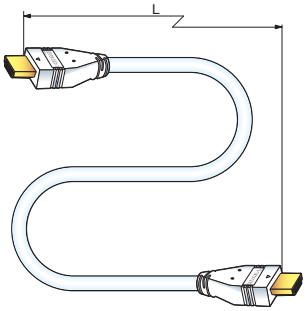
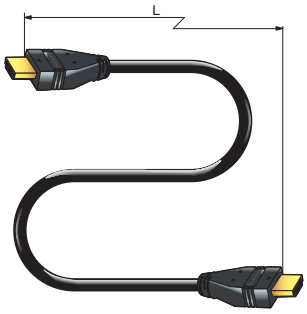
Type	Model	Length (m)
MVP-C4 LV-61S MVP-C4 L	MVPC003	0.3
	MVPC005	0.5
BLK ★ RED ★ YEL ★ GRE ★ BLU	MVPC01	1.0
MVP-C4 LV-61S BCP-A4 L ★	MVPC02A-BP	2.0
BLK ★ RED ★ YEL ★ GRE ★ BLU ★	MVPC05A-BP	5.0
BCJ-C4 LV-61S MVP-C4 L ★	MVPC002-BJ	0.2
BLK ★ RED ★ YEL ★ GRE ★ BLU		



MVPC003

★ Marked models and colors are production by order.

High Speed HDMI Cable with Ethernet

Type	Model	Length (m)	O.D. (mm)
HDMI - HDMI  WHT	**HDM006E**	0.6	6.0
	HDM01E	1	
	HDM015E	1.5	
	HDM02E	2	
	HDM03E	3	
	HDM05E	5	7.0
HDMI - HDMI (Blister Packaged)   comes in a blister package BLK MOQ: 16 pcs (3m or less) 12 pcs (5m)	**HDM009ED**	0.9	6.0
	HDM015ED	1.5	
	HDM02ED	2	
	HDM03ED	3	
	HDM05ED	5	7.0

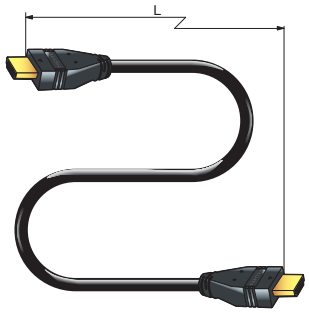
Active HDMI Cable NEW

HDMI cable built-in equalizer.

Type	Model	Length (m)	O.D. (mm)
HDMI - HDMI  Source-side Monitor-side BLK	**HDM07E-EQ**	7	6.0
	HDM10E-EQ	10	7.0
	HDM15E-EQ	15	8.0
HDMI - HDMI  Source-side Monitor-side BLK HDMI Ethernet Channel not supported	**HDM20-EQ**	20	9.0

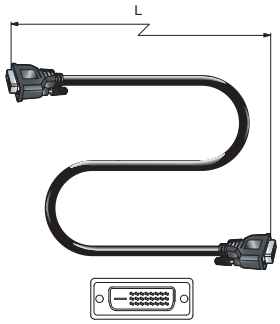
Note: Active HDMI cables are directional. Please pay attention to the plug shapes.

High Speed HDMI Cable

Type	Model	Length (m)	O.D. (mm)
HDMI - HDMI  BLK HDMI Ethernet Channel not supported	**HDM006**	0.6	5.5
	HDM01	1	
	HDM015	1.5	
	HDM02	2	
	HDM03	3	
	HDM05	5	6.5

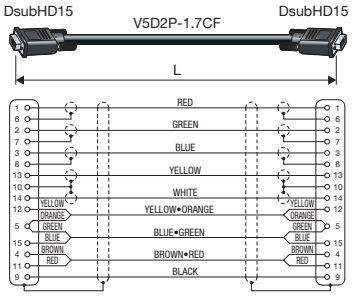
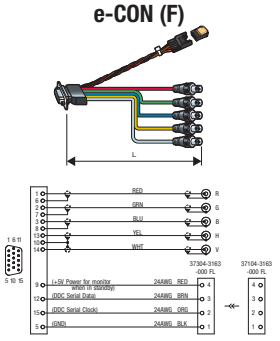
DVI-D Dual Link

VESA-DDC Plug and Play compliant

Type	Model	Length (m)
DVI-D (M) - DVI-D (M)  BLK Screws: #4-40 UNC inch thread	**DVID01**	1
	DVID015	1.5
	DVID02	2
	DVID03	3
	DVID05	5

VGA

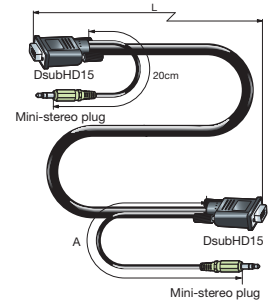
VESA-DDC Plug and Compliant.
5VDC-1.7CF series are enhanced by low-loss coax unit.

Type	Model	Length (m)
HD-15 (M) – HD-15 (M)  BLK Screws: #4-40UNC inch thread	**5VDC015-1.7CF**	1.5
	5VDC02-1.7CF	2
	5VDC03-1.7CF	3
	5VDC05-1.7CF	5
	5VDC10-1.7CF	10
	5VDC15-1.7CF	15
	5VDC20-1.7CF	20
HD-15 (M) – BNC (F) e-CON (F)  e-CON male plug and lock nuts included	**HDR15F-EJ1.5CA**	0.13

• V5D2P-1.7CF is not for sale.

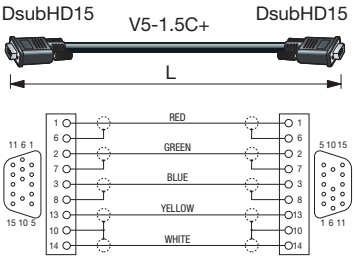
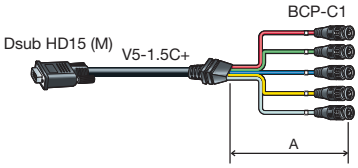
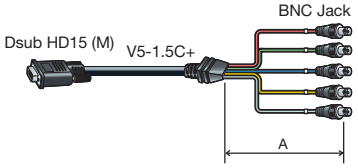
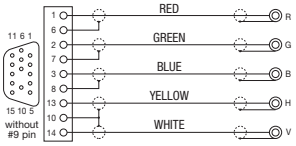
VGA with Audio

VESA-DDC Plug and Play compliant

Type	Model	Length (m)
HD-15 (M) 3.5mm TRS – HD-15(M) 3.5mm TRS  A: 20cm (A1VGA005) 60cm (others) BLK Screws: #4-40 UNC inch thread	**A1VGA005**	0.5
	A1VGA0075	0.75
	A1VGA01	1
	A1VGA015	1.5
	A1VGA02	2
	A1VGA03	3
	A1VGA05	5
	A1VGA10	10

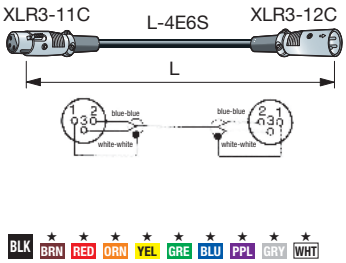
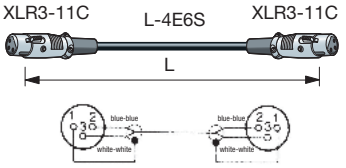
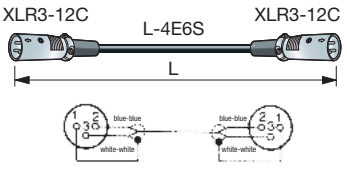
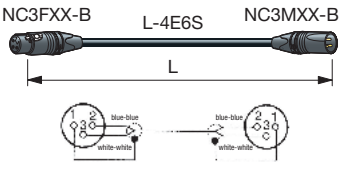
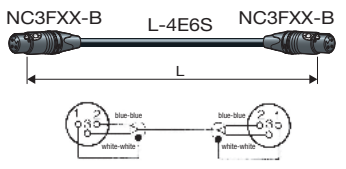
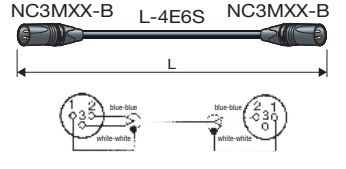
VGA

Not compatible with VESA-DDC Plug and Play.

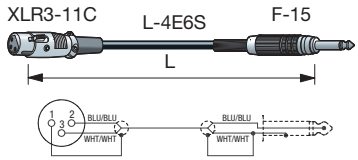
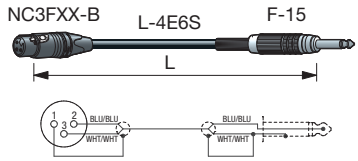
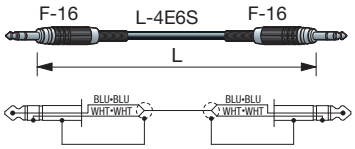
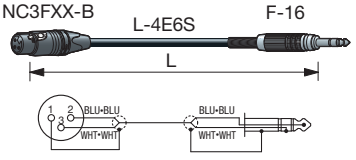
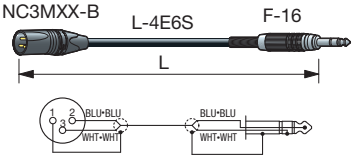
Type	Model	Length (m)
HD-15 (M) – HD-15 (M)  BLK Screws: #4-40 UNC inch thread	**5VDC015A-1.5C**	1.5
	5VDC02A-1.5C	2
	5VDC03A-1.5C	3
	5VDC05A-1.5C	5
	5VDC10A-1.5C	10
	5VDC15A-1.5C	15
	5VDC20A-1.5C	20
HD-15 (M) – BNC (M)  A: 15cm (5VDS015A-1.5C) 30cm (others) BLK Screws: #4-40 UNC inch thread	**5VDS015A-1.5C**	1.5
	5VDS02A-1.5C	2
	5VDS03A-1.5C	3
	5VDS05A-1.5C	5
	5VDS10A-1.5C	10
HD-15 (M) – BNC (F)  A: 15cm (5VDS015A-1.5C) 30cm (others)  BLK Screws: #4-40 UNC inch thread	**5VDS003A-J1.5C**	0.3
	5VDS015A-J1.5C	1.5
	5VDS02A-J1.5C	2
	5VDS03A-J1.5C	3
	5VDS05A-J1.5C	5
	5VDS10A-J1.5C	10
HD-15 (M) – BNC (F)  Lock nuts included	**HDR15F-J1.5CA**	0.13

5VDS02A-1.5C

XLR3

Type	Model	Length (m)
XLR3 (F) – XLR3 (M)  BLK ★ BRN ★ RED ★ ORN ★ YEL ★ GRE ★ BLU ★ PPL ★ GRY ★ WHT	EC003	0.3
	EC005	0.5
	EC01	1
	EC015	1.5
	EC02	2
	EC03	3
	EC05	5
	EC07	7
	EC10	10
	EC15	15
	EC20	20
XLR3 (F) – XLR3 (F)  BLK ★ BRN ★ RED ★ ORN ★ YEL ★ GRE ★ BLU ★ PPL ★ GRY ★ WHT	EC003-X11	0.3
	EC005-X11	0.5
	EC01-X11	1
	EC015-X11	1.5
	EC02-X11	2
	EC03-X11	3
	EC05-X11	5
	EC10-X11	10
XLR3 (M) – XLR3 (M)  BLK ★ BRN ★ RED ★ ORN ★ YEL ★ GRE ★ BLU ★ PPL ★ GRY ★ WHT	EC003-X22	0.3
	EC005-X22	0.5
	EC01-X22	1
	EC015-X22	1.5
	EC02-X22	2
	EC03-X22	3
	EC05-X22	5
	EC10-X22	10
NC3 (F) – NC3 (M)  BLK ★ BRN ★ RED ★ ORN ★ YEL ★ GRE ★ BLU ★ PPL ★ GRY ★ WHT	★ EC003-B	0.3
	★ EC005-B	0.5
	★ EC01-B	1
	EC015-B	1.5
	★ EC02-B	2
	EC03-B	3
	EC05-B	5
	EC07-B	7
	EC10-B	10
	EC15-B	15
	EC20-B	20
NC3 (F) - NC3 (F))  BLK ★ BRN ★ RED ★ ORN ★ YEL ★ GRE ★ BLU ★ PPL ★ GRY ★ WHT	★ EC003-B11	0.3
	★ EC005-B11	0.5
	★ EC01-B11	1
	★ EC015-B11	1.5
	★ EC02-B11	2
	★ EC03-B11	3
	★ EC05-B11	5
	★ EC10-B11	10
NC3 (M) - NC3 (M)  BLK ★ BRN ★ RED ★ ORN ★ YEL ★ GRE ★ BLU ★ PPL ★ GRY ★ WHT	★ EC003-B22	0.3
	★ EC005-B22	0.5
	★ EC01-B22	1
	★ EC015-B22	1.5
	★ EC02-B22	2
	★ EC03-B22	3
	★ EC05-B22	5
	★ EC10-B22	10

Phone

Type	Model	Length (m)
Mono Phone (M) - Mono Phone (M)  BLK ★ RED ★ ORN ★ YEL ★ GRE ★ BLU	LC018	1.8
	LC03	3
	LC05	5
XLR3 (F) - Mono Phone (M)  BLK ★ BRN ★ RED ★ ORN ★ YEL ★ GRE ★ BLU ★ PPL ★ GRY ★ WHT	PC03	3
	PC05	5
	PC07	7
	PC10	10
NC3 (F) - Mono Phone (M)  BLK ★ BRN ★ RED ★ ORN ★ YEL ★ GRE ★ BLU ★ PPL ★ GRY ★ WHT	PC03-B	3
	PC05-B	5
	PC07-B	7
	PC10-B	10
Stereo Phone (M) - Stereo Phone (M)  BLK ★ BRN ★ RED ★ ORN ★ YEL ★ GRE ★ BLU ★ PPL ★ GRY ★ WHT	SPC01	1
	SPC03	3
	SPC05	5
	SPC07	7
	SPC10	10
NC3 (F) - Stereo Phone (M)  BLK ★ BRN ★ RED ★ ORN ★ YEL ★ GRE ★ BLU ★ PPL ★ GRY ★ WHT	SPC02-B1	2
	SPC05-B1	5
NC3 (M) - Stereo Phone (M)  BLK ★ BRN ★ RED ★ ORN ★ YEL ★ GRE ★ BLU ★ PPL ★ GRY ★ WHT	SPC02-B2	2
	SPC05-B2	5

★ Marked models and colors are production by order.

RCA (Audio)

Type	Model	Length (m)
RCA (M) – RCA (M) F-10 GS-6 F-10 L BLK ★ RED ★ ORN ★ YEL ★ GRE ★ BLU	RC018	1.8
	RC03	3
	RC05	5
XLR3 (F) – RCA (M) XLR3-11C L-4E6S F-10 L BLK ★ BRN ★ RED ★ ORN ★ YEL ★ GRE ★ BLU ★ PPL ★ GRY ★ WHT	RC02-X1	2
	RC05-X1	5
XLR3 (M) – RCA (M) XLR3-12C L-4E6S F-10 L BLK ★ BRN ★ RED ★ ORN ★ YEL ★ GRE ★ BLU ★ PPL ★ GRY ★ WHT	RC02-X2	2
	RC05-X2	5
Mono Phone (M) - RCA (M) F-15 GS-6 F-10 L BLK ★ RED ★ ORN ★ YEL ★ GRE ★ BLU	QC018	1.8
	QC03	3
	QC05	5

Speaker

Types available for either XLR or Neutrik "Speakon" connectors.

Type	Model	Length (m)
XLR4 (F) – XLR4 (M) XLR4-11C 4S6 XLR4-12C L BLK ★ RED ★ BLU ★ GRY ★ CRE	SC003	0.3
	SC005	0.5
	SC01	1
	SC05	5
	SC10	10
	SC15	15
XLR4 (F) – XLR4 (M) ★ XLR4-11C 4S8 XLR4-12C L BLK ★ GRY	SC05-S8	5
	★ SC10-S8	10
	★ SC15-S8	15
NL4 – NL4 NL4FX 4S11 NL4FX L GRY	SC05-NL	5
	SC10-NL	10
	SC15-NL	15
	SC20-NL	20
	★ SC30-NL	30

SC05-NL

Audio Patch (Bantam)

Type	Model	Length (m)
Bantam (M) – Bantam (M) Bantam molded plug L-4E5C Bantam molded plug L BLK RED ORN YEL GRE BLU GRY	BC003M	0.3
	BC006M	0.6
	BC009M	0.9
XLR3 (F) - Bantam (M) XLR3-11C L-4E5C Bantam molded plug L BLK RED ORN YEL GRE BLU GRY	BC02M-X1	2
XLR3 (M) – Bantam (M) XLR3-12C L-4E5C Bantam molded plug L BLK RED ★ ORN YEL GRE BLU GRY	BC02M-X2	2

BC003M

Audio Patch (Skini/Maxi)

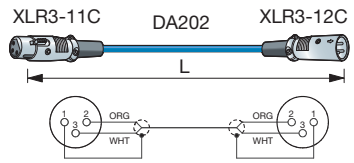
Type	Model	Length (m)
Skini/Maxi (M) – Skini/Maxi (M) NP3TMC-B L-4E6S NP3TMC-B L BLK ★ BRN ★ RED ★ ORN ★ YEL ★ GRE ★ BLU ★ PPL ★ GRY ★ WHT	TC003B	0.3
	TC005B	0.5
	TC01B	1
XLR3 (F) – Skini/Maxi (M) XLR3-11C L-4E6S NP3TMC-B L BLK ★ BRN ★ RED ★ ORN ★ YEL ★ GRE ★ BLU ★ PPL ★ GRY ★ WHT	TC02B-X1	2
	★ TC05B-X1	5
XLR3 (M) – Skini/Maxi (M) XLR3-12C L-4E6S NP3TMC-B L BLK ★ BRN ★ RED ★ ORN ★ YEL ★ GRE ★ BLU ★ PPL ★ GRY ★ WHT	TC02B-X2	2
	★ TC05B-X2	5

TC003B

★ Marked models and colors are production by order.

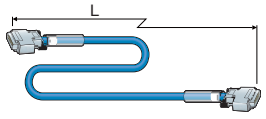
AES/EBU Digital Audio

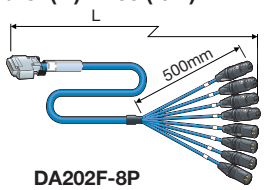
Type	Model	Length (m)
XLR3 (F) – XLR3 (M)	DAC03	3
	DAC05	5
	DAC10	10
	DAC20	20
★	DAC30	30



AES/EBU Digital Audio (Multi)

Type		Model	Length (m)
Dsub25P(M) – Dsub25P(M)	★	8DAC02-xx	2
	★	8DAC03-xx	3
	★	8DAC05-xx	5
	★	8DAC07-xx	7
	★	8DAC10-xx	10
★ BLU DA202F-8P	★	8DAC30-xx	30
Dsub25P(M) - NC3 (F/M)	★	8DACS02-xB12	2
	★	8DACS03-xB12	3
	★	8DACS05-xB12	5
	★	8DACS07-xB12	7
	★	8DACS10-xB12	10
★ BLU DA202F-8P	★	8DACS30-xB12	30





* : Please use following information to fill in the 'x' in the model above.

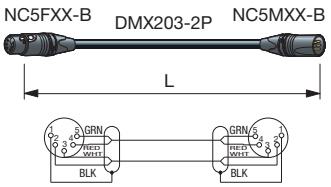
<Ordering Information>

Model	Brands (ref.)	A-side		B-side	
		Screws	Wiring	Screws	Wiring
8DAC**-DD	Digidesign	4-40	Individual-A	4-40	Individual-B
8DAC**-TT	TEAC	M2.6	Individual-A	M2.6	Individual-B
8DAC**-YY	YAMAHA	M2.6	Common-A	M2.6	Common-B
8DAC**-DT	Digidesign - TEAC	4-40	Individual-A	M2.6	Individual-B
8DAC**-DY	Digidesign - YAMAHA	4-40	Individual-A	M2.6	Common-B
8DAC**-TY	TEAC - YAMAHA	M2.6	Individual-A	M2.6	Common-B
8DACS**-DB12	Digidesign	4-40	Individual-A	N/A	2: Hot 3: Cold 1: Shield
8DACS**-TB12	TEAC	M2.6	Individual-A	N/A	
8DACS**-YB12	YAMAHA	M2.6	Common-A	N/A	

DMX

Used for controlling stage and studio lighting equipment. (DMX-512 standard compliance)

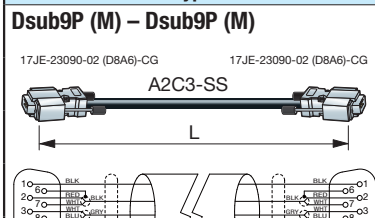
Type		Model	Length (m)
NC5 (F) – NC5 (M)	★	DMC01-B	1
		DMC03-B	3
	★	DMC05-B	5
		DMC10-B	10
		DMC20-B	20
	★	DMC30-B	30
	★	DMC50-B	50
★ BLK ★ GRY WHT	★	DMC100-B	100



RS422

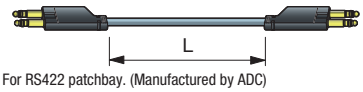
Used for RS422 serial signals that remotely control video cassette recorders.

Type	Model	Length (m)
Dsub9P (M) – Dsub9P (M)	DC01-9JE22	1
	DC03-9JE22	3
	DC05-9JE22	5
	DC07-9JE22	7
	DC10-9JE22	10
	DC20-9JE22	20
	DC30-9JE22	30
Dual Bantam – Dual Bantam	PJ762	0.3
	PJ764	0.6



Setscrews are sized in millimeters, but inch versions are also available upon special order.

BLK



For RS422 patchbay. (Manufactured by ADC)

GRY

DC01-9JE22

<Wiring>

Individual-A

Ch. No.	Color Coding	HOT	COLD	SHIELD	N.C.
1	BLU / BRN	24	12	25	13
2	BLU / RED	10	23	11	
3	BLU / ORG	21	9	22	
4	BLU / YEL	7	20	8	
5	BLU / GRN	18	6	19	
6	BLU / -	4	17	5	
7	BLU / PPL	15	3	16	
8	BLU / GRY	1	14	2	

Individual-B

Ch. No.	Color Coding	HOT	COLD	SHIELD	N.C.
1	BLU / BRN	18	6	19	13
2	BLU / RED	4	17	5	
3	BLU / ORG	15	3	16	
4	BLU / YEL	1	14	2	
5	BLU / GRN	24	12	25	
6	BLU / -	10	23	11	
7	BLU / PPL	21	9	22	
8	BLU / GRY	7	20	8	

Common-A

Ch. No.	Color Coding	HOT	COLD	SHIELD	N.C.
1	BLU / BRN	1	14	10	9 11
2	BLU / RED	2	15	12	
3	BLU / ORG	3	16	13	
4	BLU / YEL	4	17	22	
5	BLU / GRN	5	18	23	
6	BLU / -	6	19	24	
7	BLU / PPL	7	20	25	
8	BLU / GRY	8	21		

Common-B

Ch. No.	Color Coding	HOT	COLD	SHIELD	N.C.
1	BLU / BRN	5	18	10	9 11
2	BLU / RED	6	19	12	
3	BLU / ORG	7	20	13	
4	BLU / YEL	8	21	22	
5	BLU / GRN	1	14	23	
6	BLU / -	2	15	24	
7	BLU / PPL	3	16	25	
8	BLU / GRY	4	17		

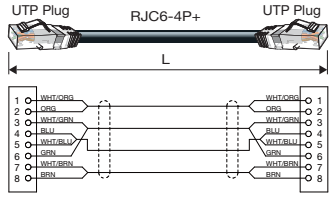
8DAC

8DACS

★ Marked models and colors are production by order.

Cat6 (Standard UTP) NEW

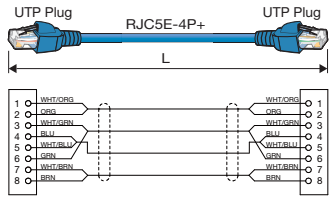
Type		Model	Length (m)
RJ45 - RJ45	★	NC6-003	0.3
	★	NC6-005	0.5
	★	NC6-01	1
	★	NC6-015	1.5
	★	NC6-02	2
	★	NC6-03	3
	★	NC6-05	5
	★	NC6-07	7
	★	NC6-10	10
	★	NC6-15	15
	★	NC6-20	20
	★	NC6-30	30
	★	NC6-40	40
	★	NC6-45	45
	★	NC6-50	50



BLK GRY T568B (Stratight)

Cat5e (Standard UTP) NEW

Type		Model	Length (m)
RJ45 - RJ45	★	NC5E-003	0.3
	★	NC5E-005	0.5
	★	NC5E-01	1
	★	NC5E-015	1.5
	★	NC5E-02	2
	★	NC5E-03	3
	★	NC5E-05	5
	★	NC5E-07	7
	★	NC5E-10	10
	★	NC5E-15	15
	★	NC5E-20	20
	★	NC5E-30	30
	★	NC5E-40	40
	★	NC5E-45	45
	★	NC5E-50	50

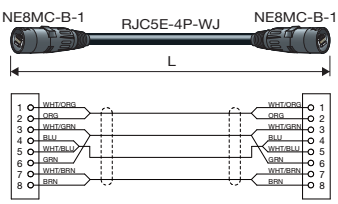


LB T568B (Stratight)

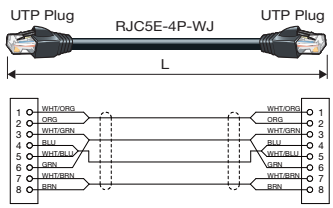
Cat5e (Rugged UTP)

Easy routing

Type		Model	Length (m)
etherCON - etherCON	★	ETC10L-B	10
	★	ETC30L-B	30
		ETC50L-B	50
	★	ETC70L-B	70
		ETC100L-B	100
RJ-45 - RJ45	★	ETC10L-M	10
	★	ETC30L-M	30
		ETC50L-M	50
	★	ETC70L-M	70
		ETC100L-M	100



BLK T568B (Stratight)

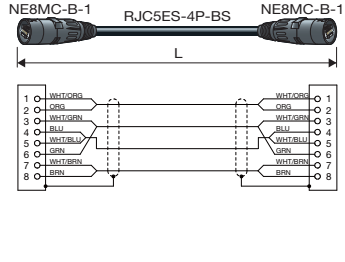


BLK T568B (Stratight)

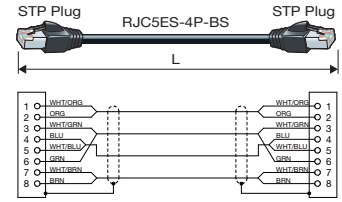
Cat5e (Flexible STP)

Recommended length up to 50m.
Ideal for repeated bending use.

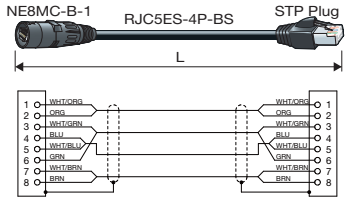
Type		Model	Length (m)
etherCON - etherCON	★	ETC003S-B	0.3
	★	ETC005S-B	0.5
	★	ETC01S-B	1
	★	ETC015S-B	1.5
	★	ETC02S-B	2
		ETC03S-B	3
	★	ETC05S-B	5
		ETC07S-B	7
	★	ETC10S-B	10
		ETC15S-B	15
		ETC20S-B	20
	★	ETC30S-B	30
	★	ETC50S-B	50
RJ-45 - RJ45	★	ETC003S-M	0.3
	★	ETC005S-M	0.5
	★	ETC01S-M	1
	★	ETC015S-M	1.5
	★	ETC02S-M	2
		ETC03S-M	3
	★	ETC05S-M	5
		ETC07S-M	7
	★	ETC10S-M	10
		ETC15S-M	15
		ETC20S-M	20
	★	ETC30S-M	30
	★	ETC50S-M	50
etherCON - RJ45	★	ETC02S-BM	2
	★	ETC05S-BM	5



BLK T568B (Straight)



BLK T568B (Straight)



BLK T568B (Straight)

Neutrik etherCON NE8MC-B-1

RJC5E-4P-WJ
RJC5ES-4P-BS

★ Marked models and colors are production by order.

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Canare Electric Co., Ltd.
Japan Headquarters (Overseas Department)

4th FL, WN Bldg., 2-4-1 Shin-Yokohama, Kouhoku-ku,
Yokohama-shi, Kanagawa, 222-0033 Japan
Phone: +81-45-470-5674
Fax: +81-45-470-5676
E-mail: overseas@canare.co.jp

www.canare.co.jp/en/

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Certification

Catalog information current as of February 2014.