

Video Distribution Amplifiers

What is a Distribution Amplifier?

A Video Distribution Amplifier, or "DA" takes a single baseband video input signal and generates copies of that signal to drive multiple outputs. VAC's DAs are *active devices*: the output signals are amplified and buffered, so that the signal quality on any of the outputs does not degrade when additional devices are connected to the DA.

Why Use VAC Video DAs?

VAC is the market leader in delivering exceptionally compact, reliable, and high-quality video distribution amplifiers for broadcast, professional AV, security, military, and manufacturing applications. VAC offers an array of options to ensure that we can deliver the product that meets your exact needs.

VAC video DA products incorporate the following valuable features:

- True 75 Ohm BNC connectors provide accurate matching to coax cable input and outputs; also available with RCA connectors.
- Sophisticated power supply circuitry to eliminate interference from noisy or poorly regulated power sources.
- Exceptionally flat gain characteristics across the entire bandwidth to provide the highest quality signal reproduction
- Epoxy encapsulated "Brick" is virtually impervious to environmental extremes.

VAC DA products are available for the following video signal formats:

- | | |
|-----------------------------------|-------------------|
| • Composite (NTSC or PAL) | Pages: 7-9, 17-18 |
| • Quad DA | Pages: 10 |
| • DVR _x | Pages: 11-14 |
| • Composite Video EQ DA | Pages: 15-16 |
| • Y/C (S-Video) | Pages: 19-20 |
| • Component (RGB, RGBs) | Pages: 21-22 |
| • High Definition Component Video | Pages: 23 |
| • SDI Digital | Pages: 24 |

Depending on the signal format and model chosen, DAs are available with up to 16 outputs; unity, global variable, or individual variable gain; and standard, differential, loop-thru, or loop-thru differential inputs.

For more information on gain and input configuration options, see the Technical Data section on page 71.

VAC offers over 300 standard video DA products, and is the only manufacturer that offers such a wide variety of features in a compact, mount-anywhere package. Finding the exact product for a specific application is easy, as the catalog pages are organized by signal format and then by number of outputs, with the options and part numbers shown in an easy-to-read table format.

Many less-common product configurations are not shown in this catalog. These products are, however, still available from VAC. To find a product configuration not listed in the catalog, please call the factory or use **Build-A-Brick™**, the automated product selection tool on the VAC website at www.vac-brick.com.

VAC Distribution Amplifiers are available in the following product families:

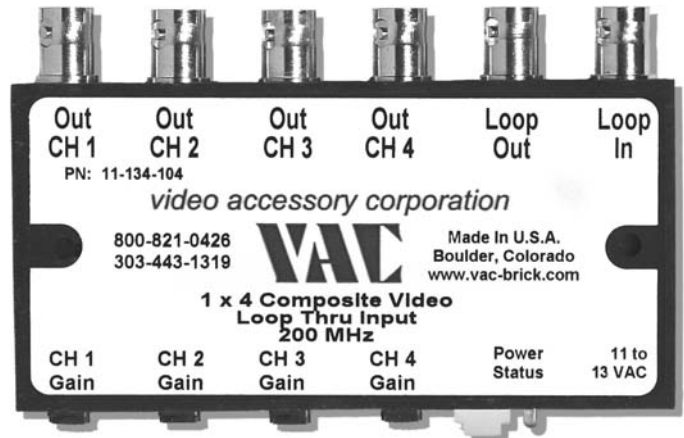
Basic Block™ - Compact (2.2" x 2.2" x 0.65"), cost-effective solutions when a line driver or two output DA is needed. All Basic Block products operate from 10-24V AC or DC power.



Mini Function Block™ - Miniature (2.0" x 1.5" x 0.5") four-output DAs with solder-tab or Terminal Block connections. Mini Function Blocks are ideal for applications where space is at a premium.

For more information on Mini Function Blocks and product listings, see pages 53-56.

ProSeries™ - VAC's more versatile family of products. Designed to the demanding needs of broadcast engineers, rugged enough for military applications, and competitively priced. ProSeries products meet the challenging requirements of today's video professionals.



Legacy™ - While many of VAC's older products are no longer in production, several of our "best sellers" are still available while supplies last. VAC is phasing out the Legacy products as critical components are becoming obsolete.

See the Legacy to ProSeries **Cross Reference List** (shown in the Technical Data Section on pages 73-74) to find the ProSeries replacement for discontinued Legacy Products.

Video Distribution Amplifier General Product Specifications

Basic Block™		ProSeries™	
Bandwidth	DC -100 MHz	Bandwidth	DC -200 MHz
Input Impedance	Standard Input: 75 Ohms Differential: 75 Ohms Loop-Thru: > 5k Ohms	Input Impedance	Standard Input: 75 Ohms Differential: 75 Ohms Loop-Thru: > 5k Ohms
Input Signal Level	0-2Vpp; (0V DC offset)	Input Signal Level	0-2Vpp; (0V DC offset)
Input Coupling	DC	Input Coupling	DC
Output Impedance	75 Ohms	Output Impedance	75 Ohms
Variable Gain	0.75X to 1.75X	Variable Gain	0.75X to 1.75X
Power*	10-24V AC or DC	Power*	12VAC or FlexPwr™
Dimensions	2.2" x 2.2" x 0.65" (not including connectors) See figure A, page 69	Dimensions	See Product Packaging below
Mounting	Two 6-32 threaded brass inserts	Mounting	Two 6-32 threaded brass inserts
Shipping weight	2 lbs	Shipping weight	See Product Packaging on pages 68-70 (Technical Data)

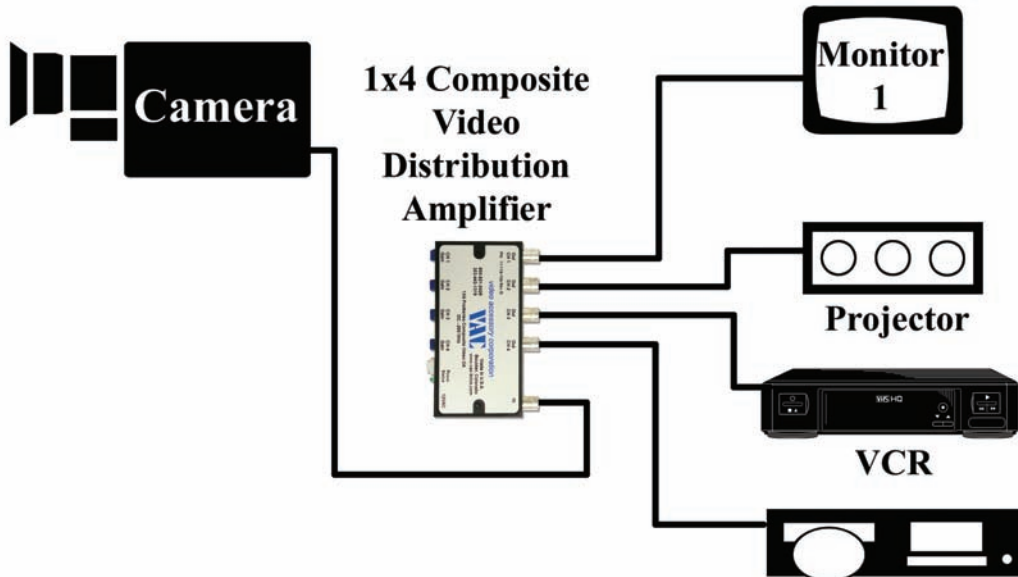
**Wall transformers are included with all ProSeries™, Basic Block™, and Legacy™ “Bricks” at no extra charge. See page 75 for information on power supply options.*

To determine the dimensions of a ProSeries video distribution amplifier, use the table below:

<u>Number of outputs</u>	<u>Connector Type</u>	<u>Size*</u>	<u>Figures (p.69-70)</u>
2 or 4	BNC or RCA	4.4" x 2.2" x 0.65"	B
8	BNC or RCA	4.4" x 2.2" x 1.4"	C
12	BNC or RCA	4.4" x 2.2" x 2.15"	D
16	BNC or RCA	4.4" x 2.2" x 2.9"	E

*not including connectors

Typical Application for a Composite Video Distribution Amplifier



Basic Block™ Composite Video (NTSC; PAL)

# of outputs	Input Type	Gain	BNC	RCA
1	75 Ohm Standard	Global	11-913-101	11-913-201
	Loop-Thru	Unity	11-931-101	11-931-201
		Global	11-933-101	11-933-201
	Differential	Unity	11-921-101	11-921-201
		Global	11-923-101	11-923-201
2	75 Ohm Standard	Unity	11-911-102	11-911-202
		Global	11-913-102	11-913-202
	Differential	Unity	11-921-102	11-921-202

ProSeries™ Distribution Amplifiers

1X2 Composite Video (NTSC; PAL)

Input Type	Gain	12VAC		FlexPwr	
		BNC	RCA	BNC	RCA
75 Ohm Standard	Unity	11-111-102	11-111-202	11-511-102	11-511-202
	Global Variable	11-113-102	11-113-202	11-513-102	11-513-202
	Individual Variable	11-114-102	11-114-202	11-514-102	11-514-202
Differential	Unity	11-121-102	11-121-202	11-521-102	11-521-202
	Global Variable	11-123-102	11-123-202	11-523-102	11-523-202
	Individual Variable	11-124-102	11-124-202	11-524-102	11-524-202
Loop-Thru	Unity	11-131-102	11-131-202	11-531-102	11-531-202
	Global Variable	11-133-102	11-133-202	11-533-102	11-533-202
	Individual Variable	11-134-102	11-134-202	11-534-102	11-534-202

1X4 Composite Video (NTSC; PAL)

Input Type	Gain	12VAC		FlexPwr	
		BNC	RCA	BNC	RCA
75 Ohm Standard	Unity	11-111-104	11-111-204	11-511-104	11-511-204
	Global Variable	11-113-104	11-113-204	11-513-104	11-513-204
	Individual Variable	11-114-104	11-114-204	11-514-104	11-514-204
Differential	Unity	11-121-104	11-121-204	11-521-104	11-521-204
	Global Variable	11-123-104	11-123-204	11-523-104	11-523-204
	Individual Variable	11-124-104	11-124-204	11-524-104	11-524-204
Loop-Thru	Unity	11-131-104	11-131-204	11-531-104	11-531-204
	Global Variable	11-133-104	11-133-204	11-533-104	11-533-204
	Individual Variable	11-134-104	11-134-204	11-534-104	11-534-204

ProSeries Distribution Amplifiers

1X8 Composite Video (NTSC; PAL)

Input Type	Gain	12VAC		FlexPwr	
		BNC	RCA	BNC	RCA
75 Ohm Standard	Unity	11-111-108	11-111-208	11-511-108	11-511-208
	Global Variable	11-113-108	11-113-208	11-513-108	11-513-208
	Individual Variable	11-114-108	11-114-208	11-514-108	11-514-208
Differential	Unity	11-121-108	11-121-208	11-521-108	11-521-208
	Global Variable	11-123-108	11-123-208	11-523-108	11-523-208
	Individual Variable	11-124-108	11-124-208	11-524-108	11-524-208
Loop-Thru	Unity	11-131-108	11-131-208	11-531-108	11-531-208
	Global Variable	11-133-108	11-133-208	11-533-108	11-533-208
	Individual Variable	11-134-108	11-134-208	11-534-108	11-534-208

1X12 Composite Video (NTSC; PAL)

Input Type	Gain	12VAC		FlexPwr	
		BNC	DIN	BNC	DIN
75 Ohm Standard	Unity	11-111-112	11-111-212	11-511-112	11-511-212
	Global Variable	11-113-112	11-113-212	11-513-112	11-513-212
Differential	Unity	11-121-112	11-121-212	11-521-112	11-521-212
	Global Variable	11-123-112	11-123-212	11-523-112	11-523-212
Loop-Thru	Unity	11-131-112	11-131-212	11-531-112	11-531-212
	Global Variable	11-133-112	11-133-212	11-533-112	11-533-212

1X16 Composite Video (NTSC; PAL)

Input Type	Gain	12VAC		FlexPwr	
		BNC	DIN	BNC	DIN
75 Ohm Standard	Unity	11-111-116	11-111-216	11-511-116	11-511-216
	Global Variable	11-113-116	11-113-216	11-513-116	11-513-216
Differential	Unity	11-121-116	11-121-216	11-521-116	11-521-216
	Global Variable	11-123-116	11-123-216	11-523-116	11-523-216
Loop-Thru	Unity	11-131-116	11-131-216	11-531-116	11-531-216
	Global Variable	11-133-116	11-133-216	11-533-116	11-533-216

Quad DAs

Low-Cost, Compact Multi-DA Brick®

VAC's Quad DA combines four composite video 1X2 distribution amplifiers into a compact, rugged, and inexpensive package. It is the ideal solution where a small number of video channels are required.

Unlike many multiple DA products, VAC's Quad DA does not require a rackmount; the unit is completely self-contained, and requires only input power (a 12V AC wall transformer is included) to operate.

At only 4.4" by 2.2" by 1.4" the Quad DA is small enough to mount almost anywhere. VAC also offers rackmount solutions for customers desiring to install multiple ProSeries™ products.

Specifications

Signal Type	Composite Video
Bandwidth	DC - 200 MHz (-3dB)
Input Coupling	DC
Input Signal Level	0 - 2Vpp (OV DC offset)
Impedance	75 Ohm (input and output)
Connector Type	BNC or RCA
Gain Options	Unity Global Variable (0.75X to 1.75x) Indiv. Variable (0.75X to 1.75x)
Power*	12V AC or FlexPwr™ < 200mA
Dimensions	4.4" x 2.2" x 1.4" (L x W x H) (Not including connectors)
Mounting	Two 6-32 threaded brass inserts
Shipping Weight	2 lbs



Quad DA
PN: 11-114-125

* Wall transformers are included with all ProSeries™ "Bricks" at no extra charge. See page 75 for information on power supply options.

ProSeries™ Quad DA Configurations

Connectors	Gain	12V AC	FlexPwr
BNC	Unity	11-111-125	11-511-125
	Global Variable	11-113-125	11-513-125
	Individual Variable	11-114-125	11-514-125
RCA	Unity	11-111-225	11-511-225
	Global Variable	11-113-225	11-513-225
	Individual Variable	11-114-225	11-514-225

DVR_xTM



Converting analog composite video to digital video has become commonplace in security, presentation, and broadcast systems. Regardless of the application, an optimized analog video input is essential for efficient and accurate A/D conversion. The DVR_x* product line is specifically designed to provide reliable, easy-to-use, and accurate analog video optimization. Quickly set composite video to RS-170A (NTSC) specifications with the DVR_x to ensure optimal A/D converter performance. The results can be impressive: Smaller file sizes, less distortion, and improved resolution.

Essential for DVR Applications

Unlike a video tape recorder, which simply records the incoming signal to tape, a DVR must first convert the analog signal to a digital format. When the analog video doesn't meet the RS-170A specification – either due to transmission line losses, noise, interference, or DC voltages riding on the signal – the A/D conversion process may generate errors that significantly degrade DVR performance. Problems can include erratic recording, false motion detection, and moderate to severe distortion to the video picture. VAC's DVR_x can optimize the analog signal to significantly reduce and typically eliminate many of the problems that cause poor DVR performance.

DVR_x Features

- Differential (“humbucking”) 75Ohm input mitigates ground loop interference
- Adjustable gain and EQ compensates for cable losses or low signal levels from the video source
- AC coupling on the input eliminates DC offsets
- DX Restore circuitry provides correct voltage references to ensure outputs meet RS-170A spec
- 40 MHz bandwidth is more than sufficient for NTSC quality video

* Patent Pending

Coming Soon... VAC's Auto DVR_x! Automatically adjusts gain and EQ levels for optimum signal quality; front panel display with menus for selecting automatic or manual operation. NO Back-panel controls! Call VAC or visit our website for more information.

DVR_x Bricks

DVR_x-1

Video Amplifier, single output (1X1);
Epoxy encapsulated Video Brick®

Each DA has:

- Differential 75 Ohm input (BNC)
- One active 75 Ohm output (BNC)
- Adjustable Gain 0.75X to 1.5X
- Adjustable EQ
- AC coupled input
- DC Restore circuitry eliminates DC offset
- DC coupling on outputs
- 40 MHz bandwidth (-3 dB)
- 0.5-2.0 Vpp input signal range
- +/- 8V input offset voltage range
- Output current drive > 20 mA

Size: 2.2" x 2.2" x 0.65"
(Figure A, pg. 69)

Power*: 12-24V AC/DC

Operating Temp: -40 to 50C

<u>Model</u>	<u>Part Number</u>
DVR _x -1	61-911-511



DVR_x-1
PN: 61-911-511



DVR_x-2 (FlexPwr) PN: 61-511-502

DVR_x-2 & DVR_x-4

The **DVR_x-2** is a 2-channel 1X2 composite Video DA with two outputs for each input.

The **DVR_x-4** is a 4-channel 1X2 composite Video DA with two outputs for each input.

Both the **DVR_x-2** and **DVR_x-4** are epoxy encapsulated Video Bricks, and are available with either 12V AC or FlexPwr™ internal power supplies.

Each DA has:

- Differential 75 Ohm input (BNC)
- Two active 75 Ohm outputs (BNC)
- Adjustable EQ
- Adjustable Gain 0.75X to 1.5X
- AC coupled input
- DC Restore circuitry eliminates DC offset
- DC coupling on outputs
- 40 MHz bandwidth (-3 dB)
- 0.5-2.0 Vpp input signal range
- +/- 8V input offset voltage range
- Output current drive > 20 mA

Size: DVR_x-2: 4.4" x 2.2" x 0.65"
DVR_x-4: 4.4" x 2.2" x 1.4"
(Figure B, pg. 69)

Power*: DVR_x-2: 12V AC or FlexPwr™
DVR_x-4: 12V AC or FlexPwr™

Operating Temp: -40 to 50C (12V AC)
-40 to 80C (FlexPwr)

<u>Model</u>	<u>Part Number</u>	
	<u>12V AC</u>	<u>FlexPwr</u>
DVR _x -2	61-111-502	61-511-502
DVR _x -4	61-111-504	61-511-504

**Wall transformers are included with all ProSeries™, Basic Block™ “Bricks” at no extra charge. See page 75 for information on power supply options.*

DVR_x Chassis

<u>Model</u>	<u>Signal Configuration</u>	<u>Part Number</u>
DVR _x -8	Eight 1X2 DAs	61-415-508
DVR _x -16	Sixteen 1X2 DAs	61-415-516

Each DA has:

- Differential 75 Ohm input (BNC)
- Two active 75 Ohm outputs (BNC)
- Adjustable EQ
- DC Restore circuitry eliminates DC offset
- DC coupling on outputs
- 40 MHz bandwidth (-3 dB)
- 0.75X to 1.5X gain control
- 0.5-2.0 Vpp input signal range
- +/- 8V input offset voltage range
- Output current drive > + 20ma

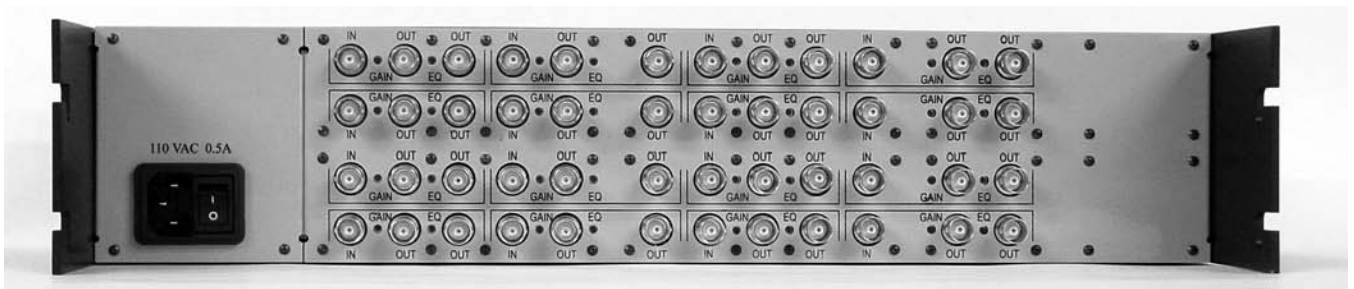
Size: DVR_x-8: 1U rack package
DVR_x-16: 2U rack package

Power: DVR_x-8: 120 VAC input power, < 200mA
DVR_x-16: 120 VAC input power, < 300mA
IEC 320 power connector

Temp: 0C to +50C operating temperature range



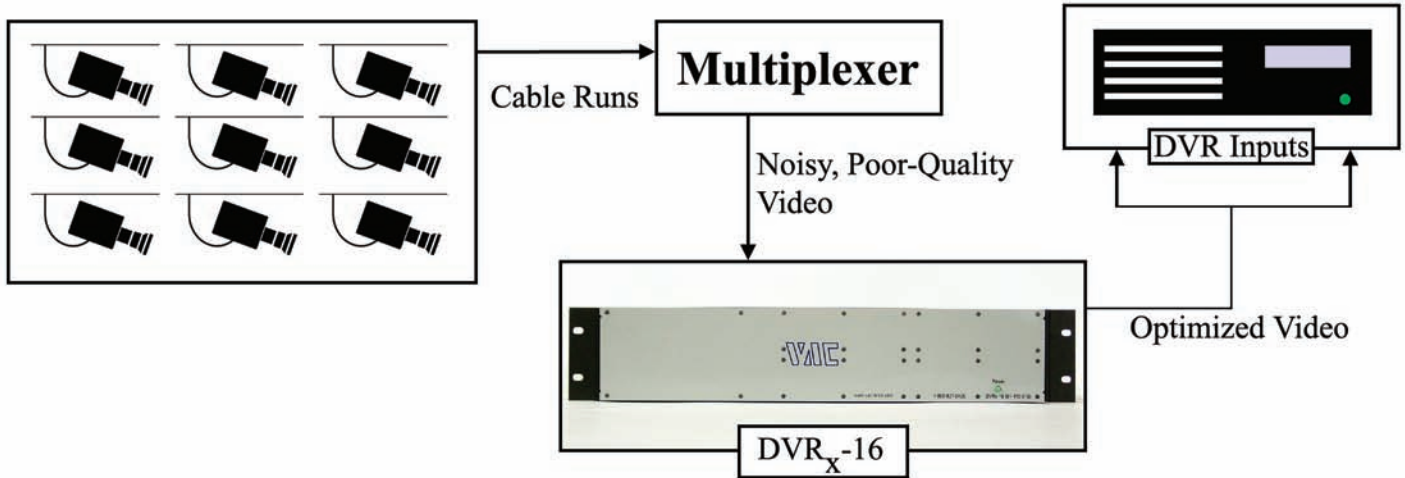
DVR_x-8 Back



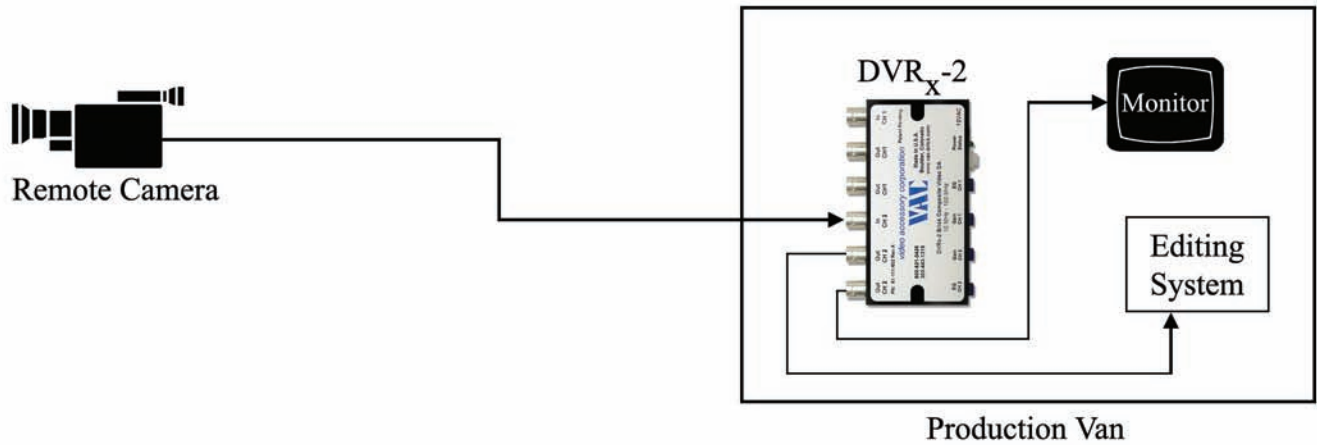
DVR_x-16 Back

DVR_x Applications Include:

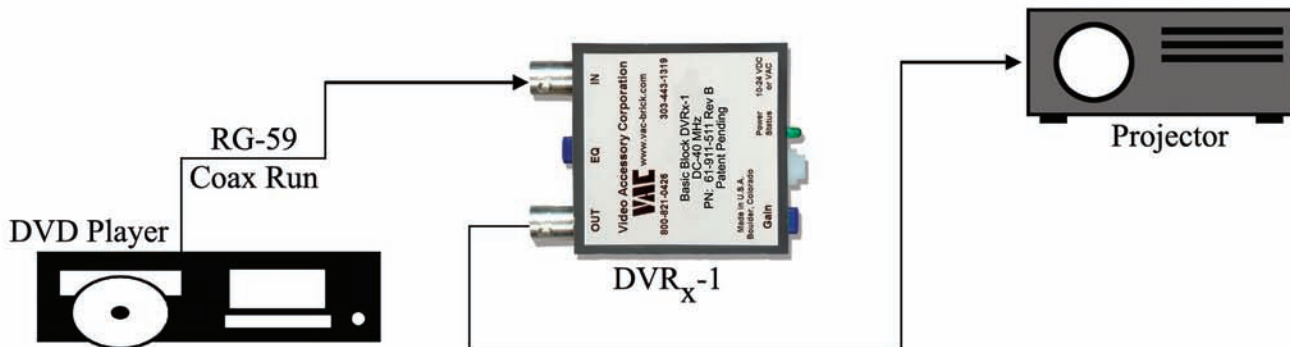
CCTV Systems . . .



Mobile News/Sports Events . . .



Problem Solver!



Legacy™ Series Distribution Amplifiers

Composite Video DAs



CVB/VDA



HBVB/VDA



MVB/VDA-4

CVB/VDA (# 100-0-001): The clamping action of the CVB/VDA corrects for 60 Hz hum, improper DC offset, and other low frequency interference in the input signal by clamping the output sync-tips to a fixed level. This correction is effective even if the signal and hum have been transmitted by microwave, satellite or fiber. An adjustable clamp level allows use with systems that require the sync-tips to be clamped to some level other than -40 IRE (-0.286 volts). The CVB/VDA provides an adjustable gain range of 0.5X to 2.0X and is designed to clamp properly when the output video signal is set to 1Vpp (140 IRE).

HBVB/VDA (# 100-0-007): The HBVB/VDA reduces or eliminates hum and herringbone interference resulting from a ground loop. The unit effectively breaks the ground loop by providing up to 15V peak hum rejection of the input signal. The unit provides four output signals with adjustable gains. The TRIM adjustment allows the user to maximize the amount of interference rejection by matching its differential input to the desired quality.

MVB/VDA-4 (# 100-0-016): The MVB/VDA-4 is a battery-operated distribution amplifier with four outputs. The MVB/VDA provides unity gain outputs, meaning the output signals are the same level as the input signal. This unit can be powered by the same battery pack as a camera. They can also be powered by truck, van, bench power supply, DC wall transformer, or a 9V lithium battery (which can last up to 48 hours). By working on a separate battery, the power line ground line is eliminated thus eliminating any interference caused by ground loops.

Specifications

	CVB/VDA (# 100-0-001)	HBVB/VDA (# 100-0-007)	MVB/VDA-4 (# 100-0-016)
Frequency Response	DC to 120 MHz @ -3 dB (1V pp input)	DC – 100 MHz @ -3 dB (1V pp input)	DC - 50 MHz @ -3 dB (1V pp input)
Input Signal	0.5 to 2.0 V pp composite NTSC or PAL video within -1V to +1V range	0.5 to 2.0V pp video within -1V to +1V range measured with respect to input ground	Nominally 1 V pp video within -1 V to +1 V range
Input Impedance	75 Ohms	75 Ohms	75 Ohms
Input Coupling	DC	DC	DC
Gain	Adjustable (1V pp input) 0.5x to 2.0x	0.5X to 2.0X Adjustable (1V pp input)	Unity (fixed)
Number of Output Output Signal	4 0.5 to 2.0 V pp composite NTSC or PAL video within -1V to +1V range	4 0.5 to 2.0V pp video within -1V to +1V range	4 Nominally 1 V pp video within -1 V to +1 V range
Output Impedance	75 Ohms	75 Ohms	75 Ohms
Differential Gain	< 0.2%, typically 0.04%	Hum dependent, typ < 0.1%	< 0.2%, typically 0.04%
Differential Phase	< 0.2°, typically 0.08°	Hum dependent, typ < 0.2°	< 0.3°, typically 0.28°
Connectors	BNC	BNC	BNC
Power Requirements	8-24V DC grounded or ungrounded, 13-24V AC ungrounded, < 100 mA, typically 50 mA	8-24V DC grounded or ungrounded, 13-24V AC ungrounded, <100 mA, typically 60 mA	6.5 - 12 VDC ungrounded (floating) <24mA (typically 22 mA when fully loaded with SMPTE bar pattern)
Dimensions	3.00" W x 0.65" H x 2.75"	3.00"W x 0.65"H x 2.75"L	1.6"H x 1.3"W x 2.12"L with 9V battery and connectors *
Shipping Weight	2 lbs (includes transformer)	2 lbs (includes transformer)	1 lb

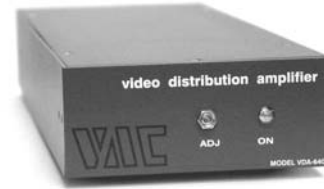
*Battery not included

Legacy™ Series Distribution Amplifiers

Composite Video DAs



HN/VDA



VDA-640

HN/VDA (# 100-0-008): The HN/VDA is a hum/interference rejecting video distribution amplifier with six outputs and gain control. The trimmable differential input takes advantage of hum and interference rejection by eliminating ground-loop noise interference. The gain control also allows the user to set the gain from 0.5X to 2.0X.

VDA-640 (# 100-0-021): The VDA-640 is a six-output loop-thru input, video distribution amplifier with gain. The loop-thru input allows the original signal to go through unimpeded to other equipment while still allowing other channels with gain control to split up the signal for processing or monitoring. If the loop-thru connector is not connected, a 75 Ohm termination must be present for the VDA-640 to work properly. Each channel has 0.5X to 2.0X of adjustable gain. 75 Ohm terminators are available for purchase.

Specifications

	HN/VDA (# 100-0-008)	VDA-640 (# 100-0-021)
Frequency Response	DC to 45MHz @ -3 dB	DC-45 MHz @ -3 dB
Input Signal	(1V pp input) 0.5V to 2.0 V pp video (-1 Volt to +1 Volt)	(1V pp input) 0.5 to 2.0V pp video (-1 Volt to +1 Volt)
Input Impedance	> 2K Ohms	>2K Ohms
Input Coupling	DC	DC
CMRR	Adjustable to better than 60 dB with a 75 Ohms source	
Gain	0.5x to 2.0x Adjustable (1V pp input)	0.5X to 2.0X Adjustable (1V pp input)
Number of Output	6	6
Output Signal	0.5V to 2.0V pp video (-1 Volt to +1 Volt)	0.5 to 2.0V pp video (-1 Volt to +1 Volt)
Output Impedance	75 Ohms	75 Ohms
Differential Gain	< 0.2%, typically 0.04%	<0.2%, typically 0.04%
Differential Phase	<0.2°, typically 0.08°	<0.2°, typically 0.08°
Connectors	BNC	BNC
Power Requirements	12-24 VAC or 12-24 VDC ungrounded either polarity, <120 mA, typically 80 mA	12-24 VDC or 12-24 VAC ungrounded either polarity, <120mA, typically 80mA
Dimensions	4.25"W x 1.75"H x 12"L (with connectors)	4.25"W x 1.75"H x 12"L (with connectors)
Shipping Weight	4 lbs (includes transformer)	4 lbs (includes transformer)

Equalizing Composite Video Distribution Amplifiers & Line Amplifier

Equalizing or "EQ" composite video amplifiers incorporate both variable gain and variable EQ to compensate for signal losses over long coaxial cable runs.

Why Use an Equalizing Amplifier?

Coax cable is ideal for baseband video signal transmission - over relatively short distances. Once the cable length exceeds 100 to 200 feet, cable losses can noticeably degrade picture quality. Attenuation over coax cable increases with the frequency, so the loss is not uniform across the video signal bandwidth. The high frequency loss or "roll-off" in a long cable run decreases video resolution. Sharp lines become blurry, and contrast is lost. Ghosts may appear along straight lines, or where there is significant contrast on the original signal. Text is particularly degraded, as both contrast and resolution are critical to presenting crisp, readable text on a video display.

Because different cable types have different loss characteristics, VAC offers both the Basic Block™ Line Drivers and ProSeries™ EQ DAs in versions optimized for RG-59, RG-6 or 8281 type cable.

The **Basic Block EQ Line Amplifier** is an ideal solution when only a single output is required.

The **ProSeries EQ DA** incorporates a 1X4 DA, and a differential input to mitigate ground loop interference.

Equalizing Distribution Amplifier General Product Specifications

Basic Block™		ProSeries™	
Bandwidth	DC - 25 MHz	Bandwidth	DC - 50 MHz
Input Impedance	Standard: 75 Ohms	Input Impedance	Differential: 75 Ohms
Input Signal Level	0-2Vpp; (0V DC offset)	Input Signal Level	0-2Vpp; (0V DC offset)
Input Coupling	DC	Input Coupling	DC
Output Impedance	75 Ohms	Output Impedance	75 Ohms
Gain	0.75X to 1.75X	Global Gain	0.75X to 1.75X
Power*	10-24V AC or DC	Power*	12VAC or FlexPwr™
Dimensions	2.2" x 2.2" x 0.65" (not including connectors)	Dimensions	4.4" x 2.2" x 0.65" (not including connectors)
	See figure A, page 69		See figure B, page 69
Mounting	Two 6-32 threaded brass inserts	Mounting	Two 6-32 threaded brass inserts
Shipping weight	2 lbs	Shipping weight	2 lbs

**Wall transformers are included with all ProSeries™, Basic Block™, and Legacy™ "Bricks" at no extra charge. See page 75 for information on power supply options.*

EQ Distribution Amplifiers

1X1 Basic Block™ Composite Equalizing Amplifier

Input Type	Cable Type	BNC	RCA
Standard	8281	31-951-101	31-952-101
	RG/59	31-951-201	31-952-201
	RG/6	31-951-301	31-952-301



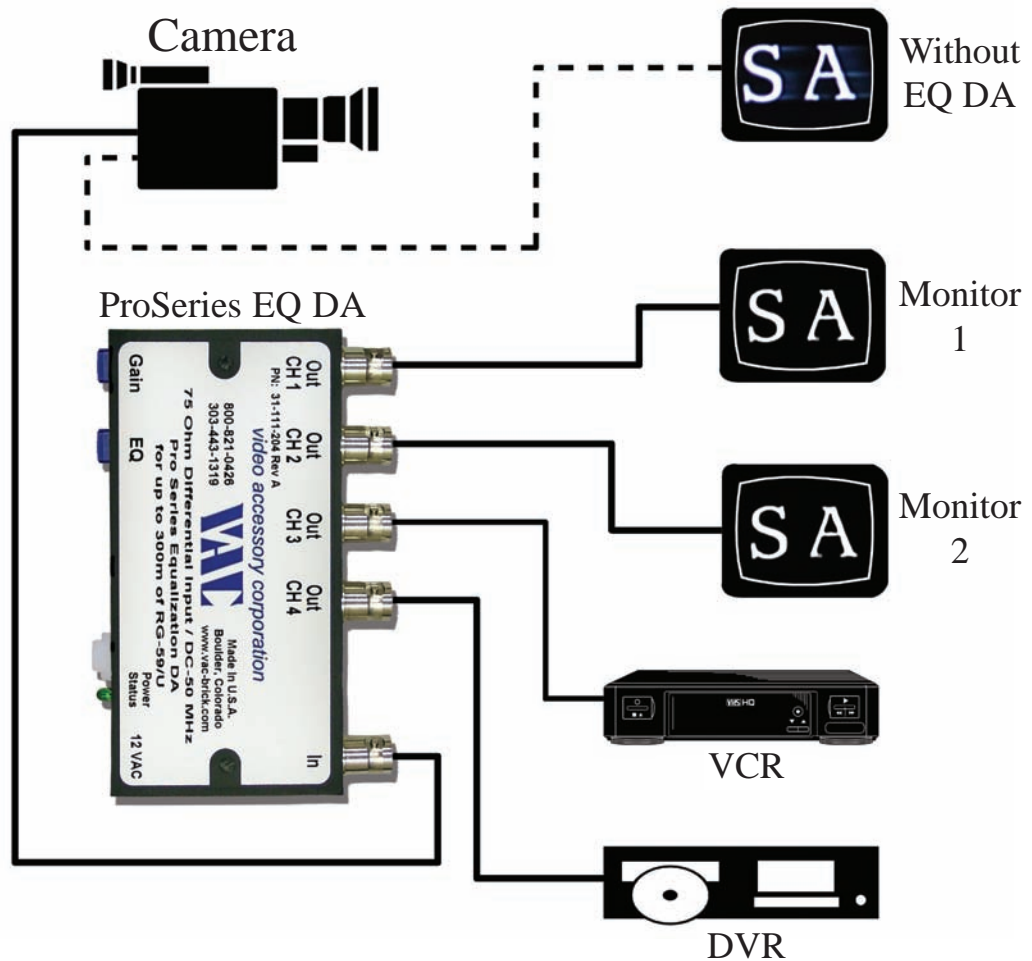
Basic Block EQ DA
PN: 31-951-101

1X4 ProSeries™ Composite Video Equalizing DA (NTSC; PAL)

Input Type	Cable Type	12VAC		FlexPwr	
		BNC	RCA	BNC	RCA
75 Ohm Differential	8281	31-111-104	31-112-104	31-511-104	31-512-104
	RG/59	31-111-204	31-112-204	31-511-204	31-512-204
	RG/6	31-111-304	31-112-304	31-511-304	31-512-304

Typical Application for a Composite Video Distribution Amplifier

The VAC Equalizing Brick® corrects video signal degradation over a long cable run and distributes the signal to multiple devices.



Y/C Video Distribution Amplifiers

In addition to our popular low-cost Basic Block Y/C DA, VAC now offers a complete line of ProSeries™ Y/C, or S-video, distribution amplifiers. ProSeries Y/C DA products are available with either DIN or BNC connectors, and unity or variable gain.

Need to distribute both audio and Y/C video? Check out our new ProSeries COMBO™ video + audio DA products starting on page 37.

Y/C Video Distribution Amplifier General Product Specifications

Basic Block™		ProSeries™	
Bandwidth	DC - 100 MHz	Bandwidth	DC - 200 MHz
Input Impedance	Standard: 75 Ohms Loop-thru: >5k Ohms	Input Impedance	Standard: 75 Ohms Loop-thru: >5k Ohms
Input Signal Level	0-2Vpp; (0V DC offset)	Input Signal Level	0-2Vpp; (0V DC offset)
Input Coupling	DC	Input Coupling	DC
Output Impedance	75 Ohms	Output Impedance	75 Ohms
Gain	Unity	Gain	Unity or Global Variable (0.75X to 1.75X)
Power*	10-24V AC or DC	Power*	12VAC or FlexPwr™
Dimensions	2.2" x 2.2" x 0.65" (not including connectors)	Dimensions	See Below
Mounting	See figure A, page 69 Two 6-32 threaded brass inserts	Mounting	Two 6-32 threaded brass inserts
Shipping weight	2 lbs	Shipping weight	See Product Packaging on pages 69-70 (Technical Data)

**Wall transformers are included with all ProSeries™ and Basic Block™ “Bricks” at no extra charge.
See page 75 for information on power supply options.*

To determine the dimensions of a ProSeries Y/C video distribution amplifier, use the table below:

Number of outputs	Connector Type	Size*	Figures (p.69-70)
2 or 4	DIN	4.4" x 2.2" x 0.65"	B
2 or 4	BNC	4.4" x 2.2" x 1.4"	C
8	DIN	4.4" x 2.2" x 1.4"	C
8	BNC	4.4" x 2.2" x 2.9"	E
12	DIN	4.4" x 2.2" x 2.15"	D
16	DIN	4.4" x 2.2" x 2.9"	E

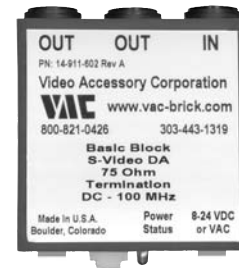
*not including connectors



1X4 Y/C Video DA
PN: 14-113-604

Basic Block™ Y/C DA

# of outputs	Input	Gain	DIN
2	Standard	Unity	14-911-602
1	Loop-thru	Unity	14-931-601



Basic Block
Y/C DA
PN: 14-911-602

ProSeries™

1X2 Y/C Video DA

Input Type	Gain	12VAC		FlexPwr	
		BNC	DIN	BNC	DIN
Standard 75 Ohm	Unity	14-111-102	14-111-602	14-511-102	14-511-602
	Global Variable	14-113-102	14-113-602	14-513-102	14-513-602
Loop-Thru	Unity	14-131-102	14-131-602	14-531-102	14-531-602
	Global Variable	14-133-102	14-133-602	14-533-102	14-533-602

1X4 Y/C Video DA

Input Type	Gain	12VAC		FlexPwr	
		BNC	DIN	BNC	DIN
Standard 75 Ohm	Unity	14-111-104	14-111-604	14-511-104	14-511-604
	Global Variable	14-113-104	14-113-604	14-513-104	14-513-604
Loop-Thru	Unity	14-131-104	14-131-604	14-531-104	14-531-604
	Global Variable	14-133-104	14-133-604	14-533-104	14-533-604

1X8 Y/C Video DA

Input Type	Gain	12VAC		FlexPwr	
		BNC	DIN	BNC	DIN
Standard 75 Ohm	Unity	14-111-108	14-111-608	14-511-108	14-511-608
	Global Variable	14-113-108	14-113-608	14-513-108	14-513-608
Loop-Thru	Unity	14-131-108	14-131-608	14-531-108	14-531-608
	Global Variable	14-133-108	14-133-608	14-533-108	14-533-608

1X12 Y/C Video DA

Input Type	Gain	12VAC	FlexPwr
Standard	Unity	14-111-612	14-511-612
	Global Variable	14-113-612	14-513-612
Loop-Thru	Unity	14-131-612	14-531-612
	Global Variable	14-133-612	14-533-612

Available with
Mini-DIN
connectors only

Component Video Distribution Amplifiers

VAC now offers ProSeries™ RGB and RGBS component video distribution amplifiers. These compact and cost-effective 1X2 and 1X4 DA products are ideal for a wide variety of applications. Built to broadcast-quality performance specifications, yet tough enough for military use, ProSeries products are at home in any environment.

Component Video Distribution Amplifier General Product Specifications

	RGB		RGBS
Bandwidth	DC - 440 MHz	Bandwidth	DC - 440 MHz
Input Impedance	Standard: 75 Ohms Loop-thru: >5k Ohms	Input Impedance	Standard: 75 Ohms Loop-thru: >5k Ohms
Input Signal Level	0-2Vpp; (0V DC offset)	Input Signal Level	0-2Vpp; (0V DC offset)
Input Coupling	DC	Input Coupling	DC
Output Impedance	75 Ohms	Output Impedance	75 Ohms
Global Gain	0.75X to 1.75X	Global Gain	0.75X to 1.75X
Power*	12VAC or FlexPwr™	Power*	12VAC or FlexPwr™
Dimensions	4.4" x 2.2" x 2.15" (not including connectors) See figure D, page 70	Dimensions	4.4" x 2.2" x 2.9" (not including connectors) See figure E, page 70
Mounting	Two 6-32 threaded brass inserts	Mounting	Two 6-32 threaded brass inserts
Shipping weight	3 lbs	Shipping weight	4 lbs

*Wall transformers are included with all ProSeries™ “Bricks” at no extra charge. See page 75 for information on power supply options.



1X4 RGB Distribution Amplifier
PN: 12-511-114

ProSeries RGB Distribution Amplifiers

RGB DA

# of outputs	Input Type	Connector Type	12VAC	FlexPwr
2	Standard	BNC	12-111-112	12-511-112
		RCA	12-111-212	12-511-212
	Loop-Thru	BNC	12-131-112	12-531-112
		RCA	12-131-212	12-531-212
4	Standard	BNC	12-111-114	12-511-114
		RCA	12-111-214	12-511-214
	Loop-Thru	BNC	12-131-114	12-531-114
		RCA	12-131-214	12-531-214

RGBS DA

# of outputs	Input Type	Connector Type	12VAC	FlexPwr
2	Standard	BNC	12-111-122	12-511-122
		RCA	12-111-222	12-511-222
	Loop-Thru	BNC	12-131-122	12-531-122
		RCA	12-131-222	12-531-222
4	Standard	BNC	12-111-124	12-511-124
		RCA	12-111-224	12-511-224
	Loop-Thru	BNC	12-131-124	12-531-124
		RCA	12-131-224	12-531-224



1X4 RGBS Distribution Amplifier with Loop-thru input

PN: 12-531-124

Component HDTV Distribution Amplifiers

With a 200 MHz bandwidth VAC's HDTV DAs support Y/Pb/Pr and Y/Cb/Cr, 480p or 1080i HD component signals. Trust VAC to deliver cost-effective, professional grade HD solutions that fit your most demanding requirements.



1X4 ProSeries HDTV Component Video DA
PN: 12-531-144

HDTV Specifications	
Bandwidth	DC - 200 MHz
Input Impedance	Standard: 75 Ohms Loop-thru: >5k Ohms
Input Signal Level	0-2Vpp; (0V DC offset)
Input Coupling	DC
Output Impedance	75 Ohms
Gain	Unity or Variable Gain 0.75X to 1.75X
Power*	12VAC or FlexPwr™
Dimensions	4.4" x 2.2" x 2.15" (not including connectors) See figure D on pg 70
Mounting	Two 6-32 threaded brass inserts
Shipping weight	4 lbs

*Wall transformers are included with all ProSeries™ "Bricks" at no extra charge. See page 75 for information on power supply options.

1X2 Component HDTV DA

Input Type	Gain	Connector Type	12VAC	FlexPwr
Standard	Unity	BNC	12-111-142	12-511-142
		RCA	12-111-242	12-511-242
	Global Variable	BNC	12-113-142	12-513-142
		RCA	12-113-242	12-513-242
Loop-Thru	Unity	BNC	12-131-142	12-531-142
		RCA	12-131-242	12-531-242
	Global Variable	BNC	12-133-142	12-533-142
		RCA	12-133-242	12-533-242

1X4 Component HDTV DA

Input Type	Gain	Connector Type	12VAC	FlexPwr
Standard	Unity	BNC	12-111-144	12-511-144
		RCA	12-111-244	12-511-244
	Global Variable	BNC	12-113-144	12-513-144
		RCA	12-113-244	12-513-244
Loop-Thru	Unity	BNC	12-131-144	12-531-144
		RCA	12-131-244	12-531-244
	Global Variable	BNC	12-133-144	12-533-144
		RCA	12-133-244	12-533-244

SDI Video DA

SDI Line Driver PN: 63-711-101

The multi-standard automatic reclocking SDI line driver is designed to compensate for losses in up to 300m of high-quality 75 Ohm cable at 270Mb/s. The SDI line driver will automatically recover the embedded clock signal and retime the data from a SMPTE 259M or SMPTE 344M digital video signal. Additionally it removes high-frequency jitter components, and restores the output voltage swing to 800mVp-p (within +/- 7%). The reclocking stage may be deactivated via a three-position DIP switch; a disable control for 177Mb/s data rate prevents a false lock when operating at 270 Mb/s data rates (DVB/ASI).



Features:

- Accepts multiple data rates and standards
- Automatic standard detection
- Automatic Reclocking
- Automatic equalization
- Automatically removes high-frequency jitter
- Restores output signal amplitude to specification
- Reclocking and EQ bypass controls
- User can disable 177Mb/s data rate to prevent false lock when using with DVB/AS

ProSeries™ SDI Line Driver Product Specifications

Input Impedance	75 Ohm
Input/Output Connectors	BNC
Series Output Impedance	75Ohm
Input Coupling	AC, 0.1uF
Output Coupling	AC, 4.7uF
Digital Video Standards Supported	143, 177, 270, and 360 Mb/s SDI; 270 Mb/s DVB/ASI
Resolution	8 or 10-bits
Operating Temperature Range	0 - 50 C @ 0- 95% humidity
Input Power*	10 - 24V AC or DC
Power Indication	LED
Power Connector	2.1mm P5, non-polarized
Input Current	<300mA (12V)
Package Dimensions	2.2" x 2.2" x 0.65" (excluding connectors)
Mounting	2 x 6-32 threaded inserts
Shipping Weight	2 lbs (transformer included)

*Wall transformers are included with all "Bricks" at no extra charge. See page 75 for information on power supply options.

Legacy™ Series Distribution Amplifiers



SDI/DA-LT (# 100-0-018):

The SDI/DA-LT is a Serial Digital Interface Distribution Amplifier. The unit has a single loop-thru input and uses a distribution amplifier to provide two outputs that are the same signal strength as the input. This is referred to as "unity gain". The SDI/DA-LT will work with either 270 Mb/s or 360 Mb/s serial digital information at 800 mV. The SDI/DA-LT loop-thru feature allows the original signal to go through unimpeded while producing two taps to process or monitor the input signal. If the loop-out feature is not used, a 75 Ohms terminator must be in place. The SDI/DA-LT ships with a 75 Ohm terminator and wall transformer.

Specifications

SDI/DA-LT (# 100-0-018)	
Input Signal	270 Mb/ s or 360 Mb/ s Serial Digital, 800 mV
Input Impedance	> 3K Ohms
Input Coupling	DC
Gain	Unity (Fixed)
Number of Outputs	2
Output Signal Level	Same as Input
Output Impedance	75 Ohms
Connectors	BNC
Power Requirements	8-24VDC grounded or ungrounded, 13-24VAC ungrounded, <100 mA
Dimensions	3.00" W x 0.65" H x 2.75" L (with connectors)
Shipping Weight	2 lbs (with transformer)