

BSG-26AN / BSG26AP

NTSC STANDARD / PAL STANDARD

REFERENCE COMPOSITE BLACK SIGNAL GENERATOR
With OPTIONAL SDI OUTPUT

INSTRUCTION MANUAL



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BSG-26A SERIES IMPORTANT SAFETY INSTRUCTIONS

Explanation of symbols used. The following symbols appear on the product.



DANGER
High Voltage



ATTENTION
Refer to Manual



Protective Ground
(earth) Terminal



Fuse Replacement
RISK OF FIRE
REPLACE FUSE
AS MARKED



AC
Power

Read these instructions.

Keep these instructions.

Heed all warnings.

Follow all instructions.

Do not use this apparatus near water.

Clean only with a damp cloth.

Do not block any of the ventilation openings. Install in accordance with the manufactures instructions.

Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. When the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exist from the apparatus.

Only use attachments/accessories specified by the manufacture.

Unplug this apparatus during lightning storms or when unused for long periods of time.

Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

Interference Information:

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

This Class A digital apparatus meets all requirements of the Canadian Interference Causing Equipment Regulations.



BSG-26A SERIES INSTRUCTION MANUAL

WARNING: To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.

GENERAL:

The BSG-26AN and BSG-26AP are Black Signal Generators which provide six (6) blackburst signal outputs or with the addition of the Optional SDI Output Accessory, two of the six outputs are converted to SDI Digital signals. The outputs are driven from the same internal source to ensure system synchronization. The design of the units provides suitable operation for applications from complex total system timing to laying black on tape. The blackburst signal is digitally derived from a temperature compensated oscillator. These units provide a stable output and do not require any adjustments during operation. The outputs are present when power is applied.

The BSG-26AN, NTSC version, provides outputs per RS-170A / SMPTE 170M standards. The BSG-26AP, PAL version, provides outputs per CCIR 624-4 standards. Specifications are provided in the SPECIFICATIONS section.

POWER:

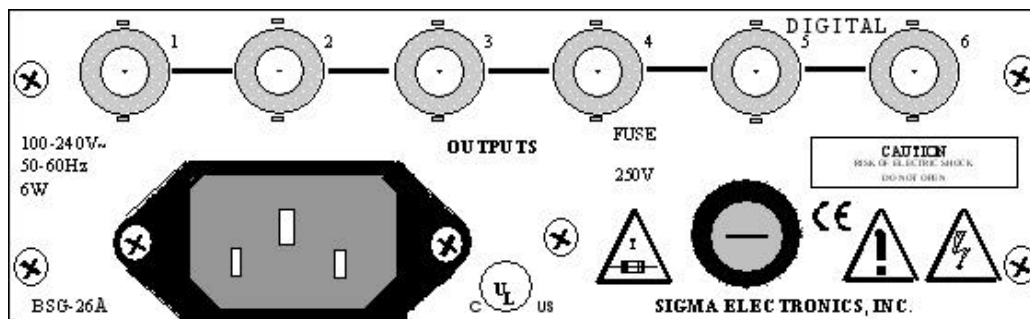
The BSG-26A Series accommodates a wide range of line voltage from 90 VAC minimum to 255 VAC maximum. The line frequency range is 50 to 60 Hz. The units utilize an IEC 320 inlet to accommodate the proper power cord set for the line voltage connectors used in any geographical area. The combination of the wide voltage range and universal inlet contributes to the diversity of applications where the BSG-26A will supply a dependable source of black signal. An externally accessible fuse provides circuit protection (Figure 1).

FRAMES:

The BSG-26A units are assembled in a stand-alone box. The metal enclosure provides desirable shielding from external EMI / RFI noise sources. See the section on SPECIFICATIONS for recommended operational conditions. The units are capable of rack mounting with the optional RMK-26 Rack Mount Kit. This 1RU rack mount does not require blank panels for unused portions. A total of three (3) Series 26 units may be mounted with a single RMK-26.

CONNECTIONS:

The connectors are located on the rear panel. BNC connectors are used for the six outputs. When the Optional SDI OUT kit is installed, Outputs 5 and 6 change to SDI signals. Each of the outputs are designed to drive a 75 Ω load. The outputs must be terminated by a single, end of line 75 Ω termination to ensure proper signal level. Unused Analog outputs do not require a 75 Ω terminating resistor however Unused Digital outputs are best when terminated.



REAR PANEL
Figure 1

SWITCH SETTINGS:

Switch settings are provided for custom configuration. No switch settings change for normal Black Signal operation. See the Service Manual for details. Note: Altering the switch settings should be attempted by qualified personnel only.

ADJUSTMENTS:

Adjustments are provided for custom configuration. No adjustments are required for normal Black Signal operation. Note: Adjustments to be performed by qualified personnel only.

SPECIFICATIONS

OUTPUTS:

- BSG-26AN: (6) Blackburst, per RS -170A (NTSC), SMPTE 170M
- BSG-26AP: (6) Blackburst, per CCIR 624-4 (PAL)
- LEVELS: In accordance with standards specified.
- SCH PHASE: 0° ±5°
- SCH ? JITTER: < 2°p-p
- SETUP Switch Selectable, +7.5, 0 IRE
- MASTER CRYSTAL STABILITY: 27.000000 MHz TCXO, NTSC/PAL
 - Initial 1 PPM
 - vs. Time 1 PPM/Year
 - vs. Temperature ... 1 PPM, 0°C to +50°C
- CONNECTORS: BNC
- OPTIONAL SDI OUT Conforms to ANSI/SMPTE 259M for Component Digital Signals

POWER:

- VOLTAGE RANGE: 100 to 240 VAC (-10%,+6%) (90 to 255 VAC)
- LINE FREQUENCY: 50 to 60 (±5%, 47 to 63 Hz)
- POWER CONSUMPTION: 8 Watts nominal (10 Watts max.)
- CONNECTOR: Power; IEC 320

ENVIRONMENTAL:

- OPERATIONAL TEMPERATURE: ... +32° to +122° F (0° to +50° C)

MECHANICAL:

- DIMENSIONS: 1.75" H x 5.5" W x 8.5" D (44.5 x 140 x 216 mm)
- SHIPPING WEIGHT: 4 lb. (1.8 kg)

WARRANTY:

Sigma Electronics, Inc. warrants that its products are free from defective material and workmanship at the time of shipment from Sigma Electronics. The products will possess the electrical characteristics as set forth in the specifications for a warranty period of five years. This warranty does not include any Sigma Electronics product, or part thereof, which has been subjected to misuse, neglect, improper installation, use in violation of instructions furnished, or accident. It does not extend to products that have been modified from original design outside the factory. Nor does it extend to units from which the serial number has been removed, defaced, or changed. Nor does it extend to accessories not of Sigma Electronics, Inc. manufacture.

CAUTION

These servicing instructions are for use by qualified personnel only. To reduce the risk of electric shock do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so. Refer all servicing to qualified service personnel.

Explanation of symbols used. The following symbols appear on the product.



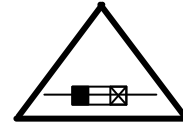
DANGER
High Voltage



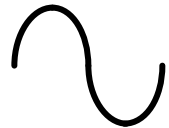
ATTENTION
Refer to Manual



Protective Ground
(earth) Terminal



Fuse Replacement
**RISK OF FIRE REPLACE
FUSE AS MARKED**



AC
Power

Read the **IMPORTANT SAFETY INSTRUCTIONS** before installing or operating this equipment. Keep this information in an accessible location for reference by all users. Follow all instructions in this manual for safe operation.

SWITCH SETTINGS:

The following switch settings are located on the PCB inside the enclosure. They are provided for custom configuration of the BSG-26AN and BSG-26AP. The modules should not require any adjustments for normal Black Signal operation.

- S2-1 Output format selection. Open – PAL Closed - NTSC
- S2-2 Switch must be set to closed position.
- S2-3 Setup selection. Open – Setup ON Closed – Setup OFF.
- S2-4 Switch must be set to closed position.

ADJUSTMENTS:

The following adjustments are located on the PCB inside the enclosure. They are provided for custom configuration of the BSG-26AN and BSG-26AP. The modules should not require any adjustments for normal Black Signal operation.

- R45 Gain adjust.
- R46 DC Offset adjust

DISASSEMBLY:

NOTE: REMOVE THE IEC320 POWER CABLE FROM THE BACK OF THE UNIT BEFORE DISASSEMBLY.

Disassembly is not necessary for normal Black Signal operation.

Tools needed: #1 Phillips head screw driver.

- Procedure:
1. Remove the four (4) rear panel Phillips head machine screws, one per corner.
 2. Remove the electrical assembly by pulling the rear panel from the enclosure; the PCB is attached to the rear panel.

TECHNICAL MANUAL:

A manual including schematics, circuit description, parts list and setup guide is available upon request. This information is intended for the service of the unit. Only qualified personnel should service the units. Sigma Electronics, Inc. recommends service to be performed by the Factory Service Center.