



DE-PLEX 216

Operator's Manual

P/N 026689-000

1. INTRODUCTION

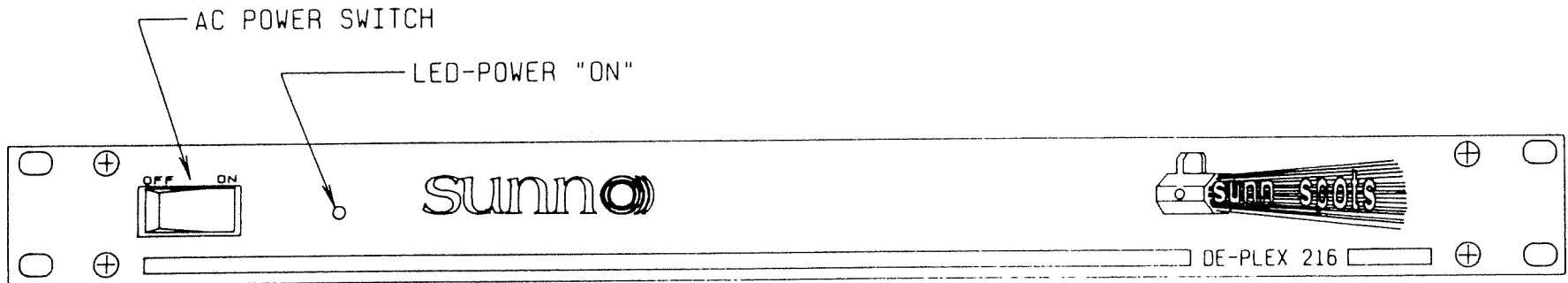
Welcome to the SUNN SPOTS™ family. The DE-PLEX 216 is a 19" rack mountable decoder for the SUNN multiplexed series of SUNN PLEX™ controller boards using a standard three conductor microphone cable to interconnect the various components of your lighting system.

The DE-PLEX 216 allows you to interface with any dimmer pack that uses the control voltage of 0 to +10 volts D.C. The DE-PLEX unit can be mounted near the dimmer packs to keep the control voltage wire lead lengths to a minimum.

In addition, the DE-PLEX 216 powers the SUNN lighting controller board by means of a phantom voltage appearing on the same microphone cable that carries the multiplexed control signal, thus eliminating the need for a separate power supply or AC cord for the lighting controller board.

In case the microphone cable between the lighting controller and the DE-PLEX 216 is suddenly severed, or there is a loss of the control signal, the DE-PLEX 216 will turn all dimmer packs to full "on" to prevent an accidental "blackout" condition.

FIGURE 1



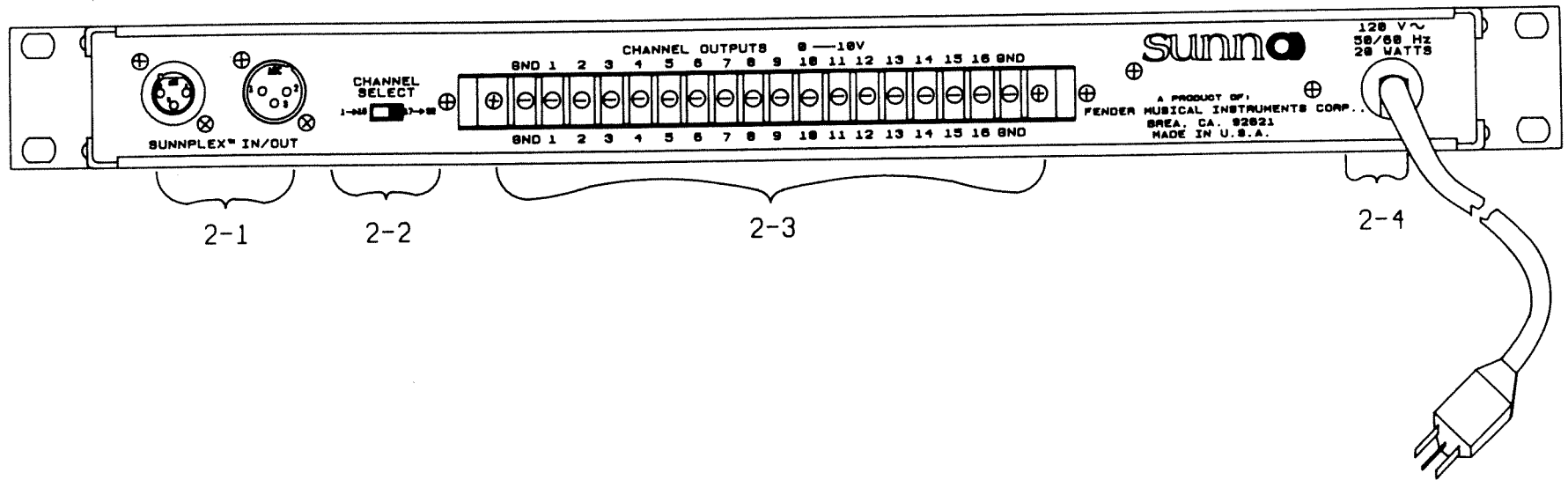
2. CONTROLS AND CONNECTIONS

The controls for the DE-PLEX 216 are few and simple. On the front panel of the rack mount unit (see Fig. 1) is the AC Power ON/OFF switch and its associated LED to indicate that it is powered on. If the lighting controller board is connected to the DE-PLEX, it too will be powered up when the DE-PLEX 216 is energized.

NOTE: It is beyond the scope of this manual to take into consideration the numerous methods of interfacing lighting controllers and dimmer packs. It is suggested that you carefully review the technical specifications of the specific dimmer pack being used with the DE-PLEX 216.

The rear of the unit is where all of the input/output connectors are accessed (see Fig. 2).

FIGURE 2



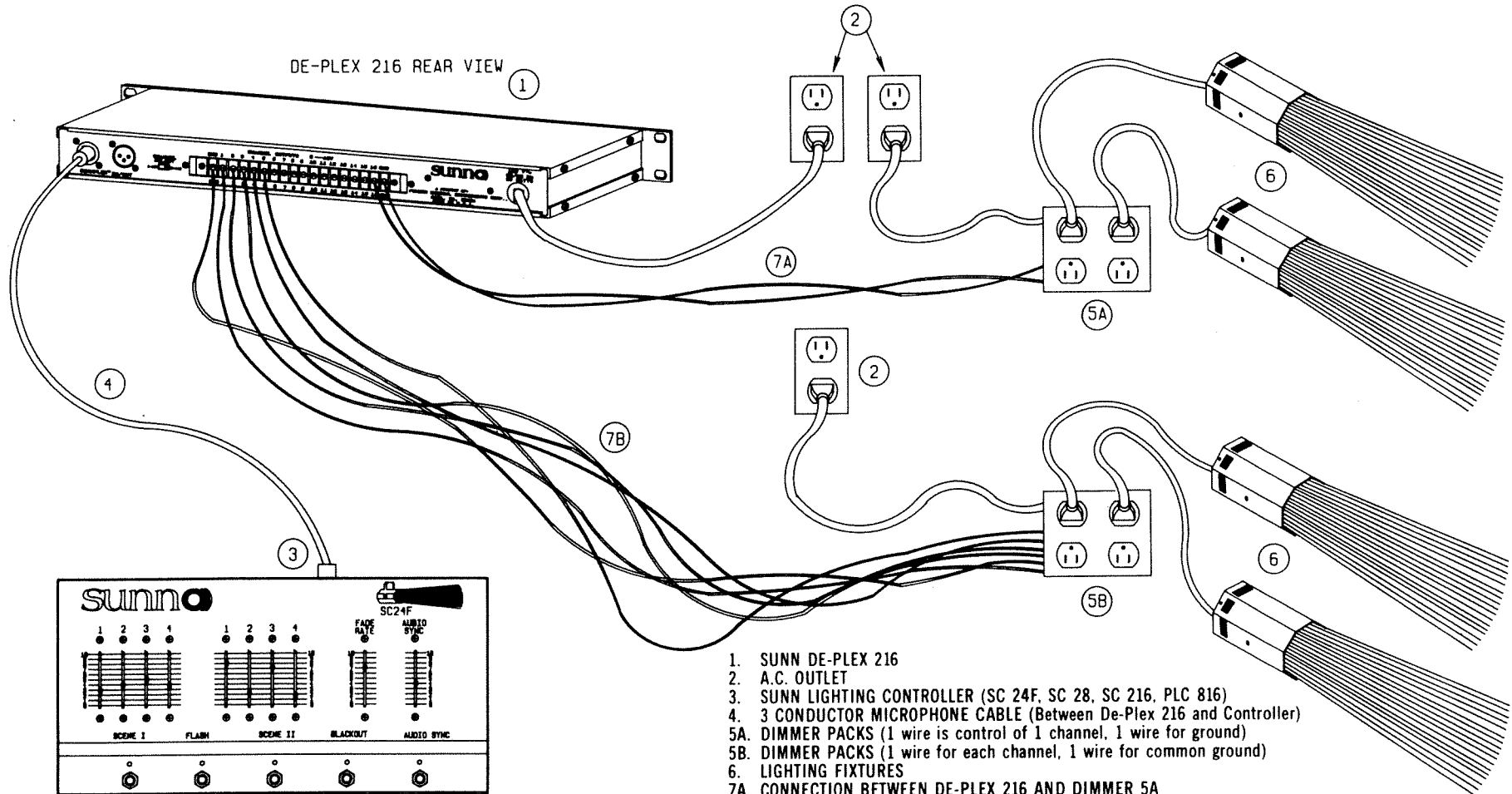
2-1. IN/OUT CONNECTORS. To the far left are the XLR (microphone cable) in/out connectors. Both connectors (XLR) are in parallel, so either can be used as the input (or output to another unit, such as a SUNN dimmer pack, another DE-PLEX, etc.).

2-2. CHANNEL SELECT SWITCH. Next to the in/out XLR connectors is a small slide switch which selects between channels 1-16 or 17-32. Since the switch is slightly recessed (to prevent unintentional movement), it may be necessary to use a small screwdriver to move the switch to the proper channel position. Slide this switch over to decode the correct channels as sent from your lighting controller board (usually channels 1-16).

2-3. TERMINAL STRIP OUTPUT. The 16 channels of d.c. output voltage that will control the dimmer packs appear at this 18 terminal screw head output strip. The screw terminals at each end are the common GROUND connections. The screw terminals numbered 1-16 (or 17-32) are the individual channel (0 to +10 volts d.c.) outputs. Wire leads will go from these terminals (one ground and one channel out) to your dimmer pack control voltage input. Section 3 will further explain interconnecting your system.

2-4. AC LINE CORD AND FUSE (internal). At the far right is the AC line cord which will be inserted into a properly grounded 3-conductor AC receptacle. The current drawn by the DE-PLEX 216 is very minimal (less than 15 watts with The SUNN SC 216 controller board connected) as compared to the dimmer packs. Internally mounted on the circuit board is a 0.25 amp fast acting fuse for protection of the power supply and circuitry. Under normal operating conditions this fuse should not have to be changed (see further in Section 4 under Troubleshooting — First).

FIGURE 3



3. OPERATION

Refer to Fig. 3 for a typical interconnection of the components of your SUNNPLEX™ lighting system.

The DE-PLEX 216 (1) is connected to the AC outlet (2) for its power. A SUNN multiplexed lighting controller (3) is connected to the De-Plex by means of a standard 3-conductor (balanced) microphone cable (4). Your Dimmer Packs (5A & 5B) are connected to the AC power source (2) by means of their AC power cords, and finally the dimmer pack control voltage input is connected to the DE-PLEX 216 by means of a 2 (or more) — conductor unshielded wire pair (7A & 7B). If the dimmer pack is only a single channel unit, then only one output terminal hot lead and one ground lead is required (5A). If the dimmer pack is a multi-channel unit (as 5B — a 4 channel dimmer pack), then four output terminal hot leads and one ground lead will be required.

In the first case (5A—single channel dimmer pack), only a 2-conductor wire is needed.

In the second example (5B—four channel dimmer pack), a five conductor wire would be necessary (four “hot” leads and one ground lead). The wires can all be of the unshielded variety, probably no smaller than 20 gauge, and preferably, stranded wire.

The exact configuration will have to be adjusted for each application due to the different manufacturers' types of dimmer packs available and number of channels, etc.

4. TROUBLESHOOTING

If the lighting system fails to operate properly, a few suggestions can be made to try to pinpoint the problem.

First—make sure AC power is applied to the DE-PLEX 216 and the Power Switch is turned “on”. The LED should be glowing red on the front panel. If not, make sure the AC outlet is indeed “live”, and if it is, the internal fuse may be open (defective). To replace the fuse requires opening the DE-PLEX 216 to gain access to the clip-in circuit board mounted fuse. THE AC POWER CORD MUST BE DISCONNECTED as dangerous high voltage is present. Refer this to authorized service personnel if you are not sufficiently skilled with these procedures. Replace the fuse with the same type 3AG, fast blo, 0.25 amp fuse.

Second—If the DE-PLEX 216 has power but the lighting controller board is not working, check the microphone cord running between the two units. The power for the lighting board comes from the De-Plex unit on one of the wires (pin 2 of the XLR, to be exact) of the mic cable, so a shorted or open mic cord connection or wire will prevent proper operation. Replace the mic cord with a known good one. (The multiplexed control signal is carried on pin 3 of the XLR, and pin 1 is ground).

Third—If all the above is functioning properly, check for d.c. control voltage at the output terminal of the DE-PLEX, and at the dimmer pack control voltage input. A Voltmeter is required to perform this test. Set all the lighting board sliders to about mid-position, and hit the RESTORE button. Approximately +5 volts d.c. should be present at the output terminals referenced to ground. (Place the voltmeters black lead on ground, and the red lead on the output terminal.) Repeat this test also at the dimmer pack control voltage input. Moving the proper channel slider should vary the d.c. voltage from approximately 0 volts to +10 volts. If the voltage is present at the dimmer pack and it still doesn't operate, then there is probably a problem with the dimmer pack, and it should be serviced.

5. THEORY OF OPERATION

For the technically inclined wishing to know a little about the operation of the Multiplex/DE-PLEX operation, a few brief notes will be mentioned here. Approximately 15 volts d.c. is supplied to the SUNN lighting controller board from the DE-PLEX 216 via pin 2 of the XLR connector. The lighting control board generates a clock signal that swings between 0 and -8 volts at a frequency of approximately 2.5 k Hz (2500 Hz). This appears at pin 3 of the XLR connector. These clock signals are sent out as two groups of 16 pulses with approximately a 4 millisecond pulse (signal low) between the groups of 16. This is used to generate the reset signal so the proper channels will be addressed by the lighting controller board. A d.c. level varying between 0 to +10 volts "rides" on top of the clock signal and represents the position of the individual sliders of the lighting controller board. The clock pulses, reset pulse, and d.c. channel level pulses are separated by the DE-PLEX circuitry, demultiplexed, and sent to 16 separate sample and hold circuits which are buffered and sent to the individual 16 channel outputs to appear at the terminal strip. These voltages then control your dimmer packs.

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