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Cat. No. 493
Auto Digital Adapter
For DA20 / CP200

Installation Instructions

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Introduction

The Dolby Cat. No. 493 Auto Digital Adapter card makes it possible for theatre systems equipped with the Dolby CP200 Cinema Processor and DA20 Digital Film Processor to switch automatically to Dolby Digital playback (Format 10) whenever a Dolby Digital print is played. The DA20 must be equipped with a Cat. No. 611A Interface card. The Cat. No. 611 will not work with the Auto Digital Adapter. Contact Dolby Laboratories or your dealer for information on the Cat. No. 611A.

These instructions are intended for existing installed CP200/DA20 systems. Please refer to the DA20 Installation Manual (Dolby Part Number 91341) for full installation instructions.

Installation

Refer to the CP200/Cat. No. 493 wiring diagram located at the end of this document.

Note: The lengths of cable in the wiring harnesses furnished with the Cat. No. 493 board are based on the mounting arrangement shown (DA20 mounted directly above the Model CP200 Cinema Processor).

The Cat. No. 493 Auto Digital adapter board should be mounted directly to terminal block BS21 by matching the printed legends. The board can be mounted above the terminal block (component side out, as shown) or below it (solder side out). We recommend mounting the board above the terminal block as shown. This orientation offers better protection from an accidental short which could damage the Cat. No. 493 circuitry.

1. Install the Cat. No. 493 board by completely removing the six screws on terminal block BS21. Alternatively, a six-way tag strip may be soldered directly to the copper plated "fingers" on the Cat. No. 493 board. The tag strip can then be mounted to BS21 by loosening each of the six screws.

2. Unplug the existing CP Sense Control cable from connector J6 on the rear of the DA20 and remove the attached wires from the CP200 back plane. Plug the new flat cable from the Cat. No. 493 board into the CP Sense Control connector J6 on the DA20. Add cable strain relief by attaching the cable to the side panel of the CP200 Control Unit using a cable tie.

3. Next, solder the remaining wiring harness wires as shown in the wiring diagram.

Notes:
If you see an existing wire soldered between edge connector SK28 Pin M and SK13 Pin 21, the wire may be removed and discarded. This function is replaced by the Red wire on the Cat. No. 493 wiring harness.

The projector 2 control wires (Blue and Green) are not necessary if your installation uses only one projector. If two projectors are used, ensure that CP200 backplane jumper PJ22 is in the vertical position (marked "n.o.") as shown.

4. Confirm that a Cat. No. 611A is installed at slot number 19 in your DA20.

Mode Selection

The top rotary switch on the Cat611A Cinema Processor Interface Card is used to select the appropriate Cinema Processor type and operating mode. Setting this switch correctly is necessary in order for the DA20 to properly sense format assertions and to enable or disable Auto Digital mode. The following table describes the CP Type switch selections.

CP Type Switch Setting	Cinema Processor and Mode
0	Do Not Use (LEDs will Flash)
1	CP55 Auto Digital
2	CP45/65/500 Auto Digital
3	**CP200 Auto Digital**
4	Do Not Use (LEDs will Flash)
5	CP55 Auto Digital Disabled
6	CP45/65/500 Auto Digital Disabled
7	**CP200 Auto Digital Disabled**
8	Do Not Use (LEDs will Flash)
9	CP55 Digital Always
A	CP45/65/500 Digital Always
B	CP200 Digital Always
C	Do Not Use (LEDs will Flash)
D	Do Not Use (LEDs will Flash)
E	Do Not Use (LEDs will Flash)
F	Do Not Use (LEDs will Flash)

When the CP Type switch is set to the Auto Digital Enabled position (3), the DA20 will automatically assert a Format 10 command to the cinema processor, if the DA20 detects that the cinema processor is in a film format and if there is valid Dolby Digital audio available. The DA20 will not automatically assert Format 10 unless a film format has been asserted first (01, 04, or 05). See the DA20 Users' manual, issue 4 and above, for specific information on the operation of the Auto Digital feature.

If you do not wish the DA20 to automatically assert Format 10, then the Auto Digital Disabled mode (7) should be used. This will disable any format assertions by the DA20.

The Digital Always mode (B) is to be used for testing and theatre alignment only. This selection disables the reversion system and forces the DA20 to remain in Format 10 always. This mode is typically used for theatre test and alignment when running film loops to keep the DA20 from reverting at splices.

NOTE: Remember to restore the CP Type switch to 3 or 7 after running test loops. Failure to do so will result in loss of sound if a faulty or non existent digital soundtrack is encountered.

Operation

Since Format 10 can be set on any of the four format switches on the CP200 front panel, the operation of the DA20 with this Cinema Processor is different than operation with a CP45, 55 or 65.

When power is first applied to the DA20, with the CP Type switch set to position 3, the DA20 will sequentially select format switches A through D, looking for Format 10. The DA20 will remember which format switch is set to Format 10 and will select this format whenever valid digital data is detected. The DA20 will scan the four format selectors up to 10 times. If no Format 10 setting is detected, the DA20 will disable the auto-digital feature as it will not know which format selector to assert. Auto-digital will then remain disabled until one of the CP200 format selectors is set to Format 10 and the DA20 is power cycled.

If the DA20 detects Format 10 on one of the format selectors, it will stop scanning and begin normal operation. In either case, the CP200 will be left in whatever format is selected by selector switch D, regardless of the wakeup format chosen on the CP200.

If Format 10 is detected on one of the format selectors, the DA20 will automatically assert that format whenever the following conditions are met:

- The DA20 detects that the CP200 is operating in a film format (Format 01, 04, or 05) as indicated by the state of the Format Bus line.
- The DA20 is decoding valid digital film data.

If the above conditions exist, then the DA20 will automatically assert Format 10 thus eliminating the need to separately cue digital films or trailers. The DA20 will continue to assert Format 10 commands after any film format assertion in order to keep the CP200 in Format 10 as long as valid digital data is available.

After the DA20 has asserted Format 10, if valid digital data is no longer available, then the DA20 will revert to analog. Though the CP200 will remain in Format 10, the yellow ‘Analog” LED will light and the audio signal path will switch to the analog SR track. At this point, an automation system or operator can assert any format. The DA20 will not re-assert Format 10 until valid digital data is again available.

To disable the automatic selection of Format 10 by the DA20, two methods are provided:

First, the CP Type switch can be set to position 7. This disables the ability of the DA20 to assert any format commands except those associated with analog reversions when in Format 10.

Second, the ‘GO’ button on the CP200 can be pressed and held for at least 5 seconds. After 5 seconds has elapsed, the green ‘Digital” LED on the DA20 will go off and the ‘Analog’ LED will flash. At this point, the CP200 will be playing the analog SR track and any format can be selected without the DA20 forcing the CP200 back into Format 10. If Format 10 is again selected, then the DA20 will remain in analog reversion mode thus forcing the CP200 to play the analog SR track. Auto-digital mode can not be re-enabled unless the DA20 is turned off and then on again, or the CP Type switch is rotated out of and back into position 3. This will cause the DA20 to re-scan the CP200 format selectors and look for Format 10 again and therefore should not be performed while film is playing.

Power Failure

If for any reason the DA20 loses power or resets while in format 10, then the CP200 will default to format 05. Relays within the DA20 will de-energize and analog sound will bypass the DA20. This will occur regardless of the position of the Cinema Processor type switch.

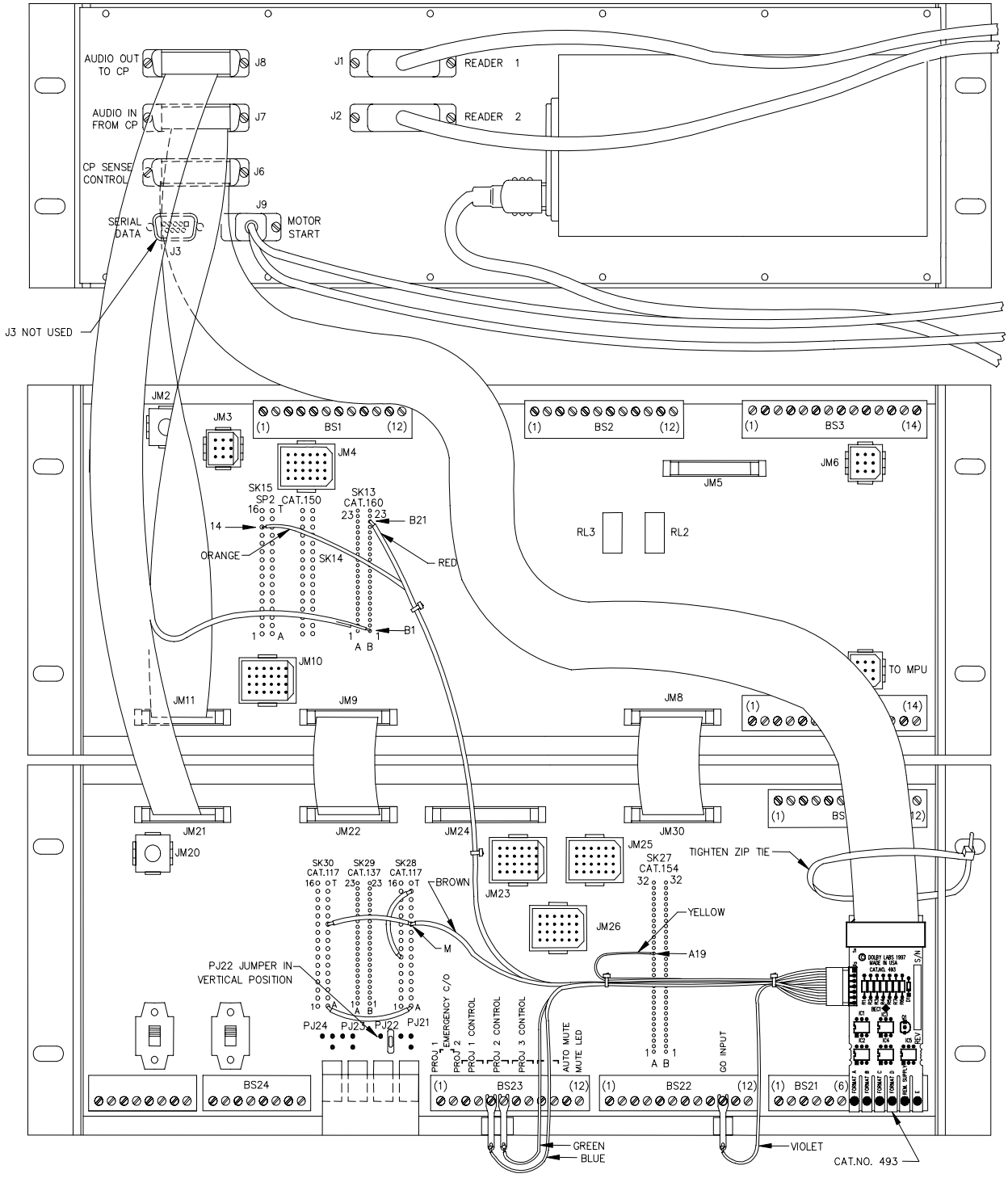
CP200 to DA20 Sense/Control

The DA20 monitors the CP200 Future 8 and Future 11 control lines to determine which format is selected on the CP200. A low level on Future 8 indicates that format 10 is selected. A low level on Future 11 indicates that an optical film format is selected. Future 11 is used to cause the DA20 to assert format 10 automatically when the DA20 is in Auto Digital Mode and valid digital audio is present. See the DA20 Users' manual, issue 4 and above, for specific information on the operation of the Auto Digital feature.

Signals "CTRL0 through CTRL7" are used to control and read status from the CP200 via the Cat. No. 493 Auto Digital Adapter board. The DA20 is connected directly to the Cat. No. 493 adapter board using a 25 pin shielded cable.

DA20 to CP200 Sense/Control Wiring Table

DA20 J6 DB25 Male Pin Number	**Cat No. 493 DB25 Female Pin Number/ CP200 Back Plane**
1 CTRL0	1 SW Control / **B21 of SK13 and M of SK28 (Soldered)**
2 CTRL1	2 Assert GO Button
3 CTRL2	3 Format A Assert
4 CTRL3	4 Format B Assert
5 CTRL4	5 Format C Assert
6 CTRL5	6 Format D Assert
7 CTRL6	7 GO Button Monitor
8 CTRL7	8 Future 11 / **A19 of SK27 (Soldered)**
9 N.C.	9 N.C.
10 N.C.	10 N.C.
11 N.C.	11 N.C.
12 GND	12 GND / **BS23 Pin 5**
13 N.C.	13 N.C.
14 SENSE0	14 Future 8 / **Pin 14 of SK15 (Soldered)**
15 N.C.	15 N.C.
16 N.C.	16 N.C.
17 N.C.	17 N.C.
18 N.C.	18 N.C.
19 N.C.	19 N.C.
20 N.C.	20 N.C.
21 N.C.	21 N.C.
22 N.C.	22 N.C.
23 N.C.	23 N.C.
24 N.C.	24 N.C.
25 C/O STATUS	25 Projector 2 / **BS23 Pin 6**



Wiring Diagram for Cat. No. 493 Auto Digital Adapter Board