

# **Dixon Systems**

**Model CS-200**

**Composite Switcher & Distribution Amplifier**

**Owner's Manual**

## Table of Contents

	Page #
Title Page	
Table of Contents	1
1-1 Description	2
1-2 Features	2
1-3 Technical Description	2
1-4 Unpacking and Inspection	3
1-5 Environmental Considerations	3
1-6 Wiring for Local Power Line Conditions	3
1-7 Theory of Operation	4
1-8 Specifications	5
1-9 Typical Performance	5
1-10 Schematic Diagrams	6, 7
1-11 Remote Connector Pinouts	8
1-12 Notes	9

### 1-1 Description:

Dixon System's CS-200 is a dual mode Composite Switcher and Distribution amplifier designed for FM transmitter sites with two or more transmitters and two composite sources. It can easily be interfaced with existing plant control systems. In its "Remote" mode, the CS-200 allows remote selection of one of two composite signals and provides three independent and isolated outputs for each transmitter. When operated in "Local" mode, there is front panel selection of the composite source for each transmitter. As well, the unit provides status back to the plant control system.

### 1-2 Features:

As indicated above, the CS-200 allows the remote selection of one of two composite sources. These are usually an STL link and land lines provided by the local telephone company. This makes it much easier to set up processing when one processor is located at the studio and another is at the transmitter site, as is often the case.

The unit provides full status, including an alarm on power failure, remote/local status, and last remote command status. The CS-200 "remembers" the last command it was given by the plant control system and will automatically return to that selection when changed from "Local" to "Remote" mode. As well, a contact closure is provided from the "Local / Remote" switch which can be used if the transmitter site has a "Go-Home" system.

The outputs marked 'Main' for transmitters 1 and 2 have a built-in bypass feature permitting the signal to pass through to the transmitter in the event of power failure to the CS-200. The two additional outputs for each transmitter are intended for modulation monitors, oscilloscopes, alternate exciters, etc. All outputs are adjusted from the front panel via multi-turn trim pots.

### 1-3 Technical Description:

The CS-200 consists of two high performance differential input amplifiers, highly reliable miniature 24 volt switching and logic relays, and two output distribution amplifiers. Separate signal and logic power supplies are employed and 1% low noise metal film resistors are used throughout the signal path. Both the power entry and remote control connector are EMI/RF filtered. Distortion and noise are extremely low.

### 1-4 Unpacking and Inspection:

Carefully examine the contents of the shipping carton for any sign of physical damage which could have occurred in Transit.

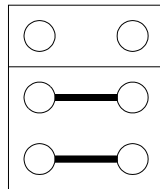
**IF DAMAGE IS EVIDENT, DO NOT DESTROY ANY OF THE PACKING MATERIAL OR CARTON AND IMMEDIATELY NOTIFY THE CARRIER OF A POSSIBLE CLAIM FOR DAMAGE. SHIPPING DAMAGE CLAIMS MUST BE MADE BY THE CONSIGNEE.**

### 1-5 Environmental Considerations:

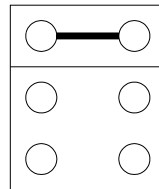
The CS-200 will operate satisfactorily over a wide range of ambient temperatures. If installed in an area with high heat producing equipment, adequate ventilation should be provided to prolong the life of components.

### 1-6 Wiring for Local Power Line Conditions:

The CS-200 is pre-wired at the factory for either 110 or 220 VAC operation as indicated on its shipping carton. To change the operating voltage requires that jumpers be installed on the power supply printed circuit board as shown below. These jumpers are located near the power entry module and filter. To comply with existing electrical codes, the unit is supplied with a three-wire AC power cord with the ground pin connected to the chassis.



Jumper Set  
for 110VAC



Jumper Set  
for 220VAC

### 1-7 General:

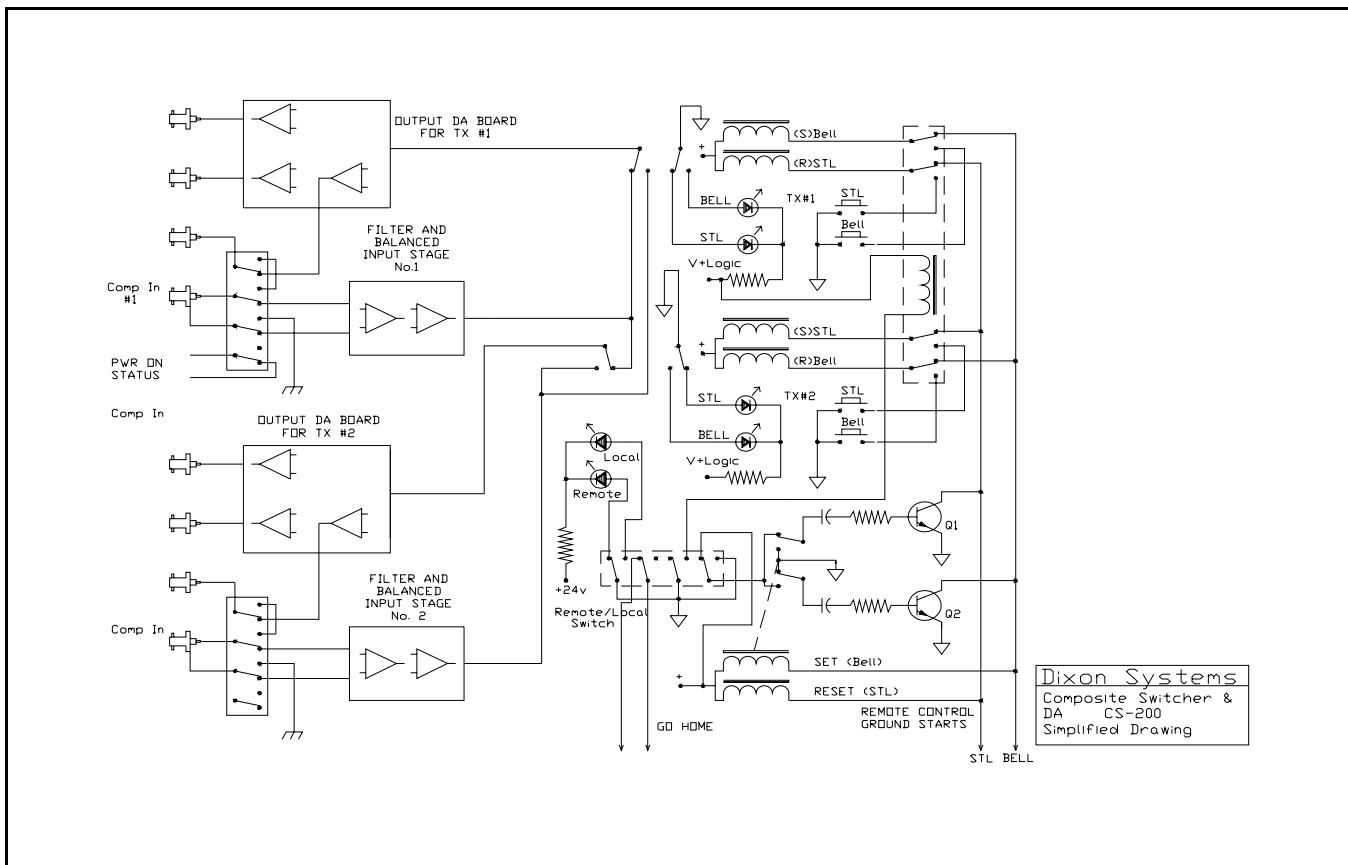
The CS-200 is ruggedly constructed and should provide years of trouble free use with normal care. All parts are conservatively rated for their application and workmanship meets the rigid standards professional users expect.

No special preventive maintenance is required.

***NB: In parts of Canada and the US, local telephone service is provided by Bell Canada, Bell South etc. The terms Telco and Bell are interchangeable for the purpose of this manual.***

**1-7 Theory of Operation:**

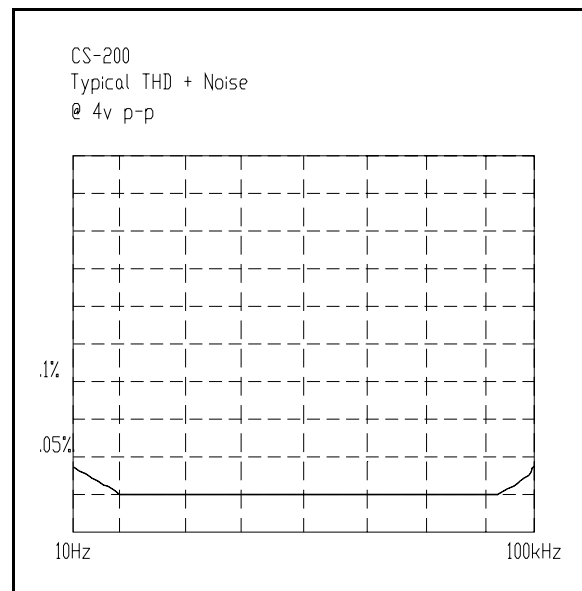
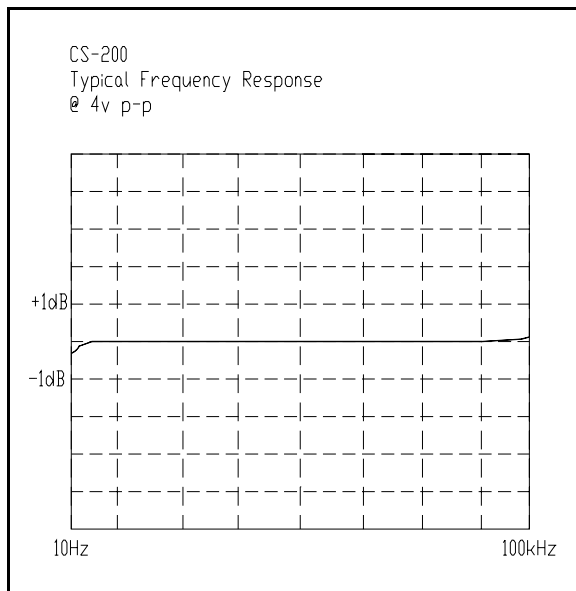
Shown below is a simplified diagram of the CS-200. There are two instrumentation differential input amplifiers, one for each composite source, and two output distribution amplifiers. Connections are made on the rear panel. Composite inputs and outputs use BNC connectors; remote control is via a female DB15 connector and gain adjustments for each output are made via multi-turn pots located on the front panel. Front panel LEDs are used to indicate local status. All switching and logic functions are controlled by miniature 24 volt relays.



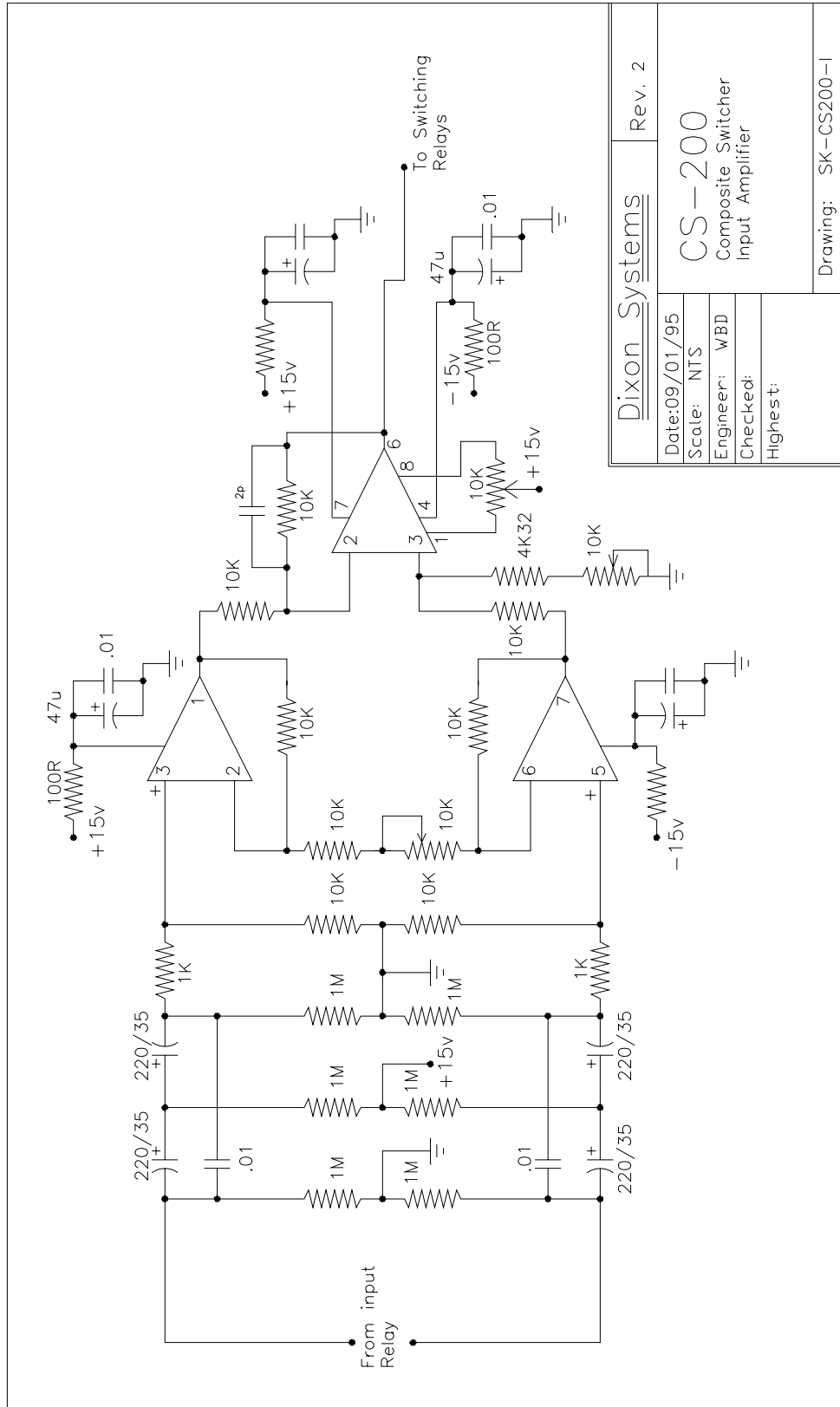
**1-8 Specifications:**

Input Impedance:	> 10kOhms
Output Impedance:	50 Ohms
Maximum Output Level	> 4V P-P
Gain:	Adjustable
Frequency Response:	< .5 dB 20 Hz to 100 kHz
Total Harmonic Distortion:	Better than .05%
Noise:	Better than 80 dB @ 4V P-P
Power Requirements:	110/220 VAC

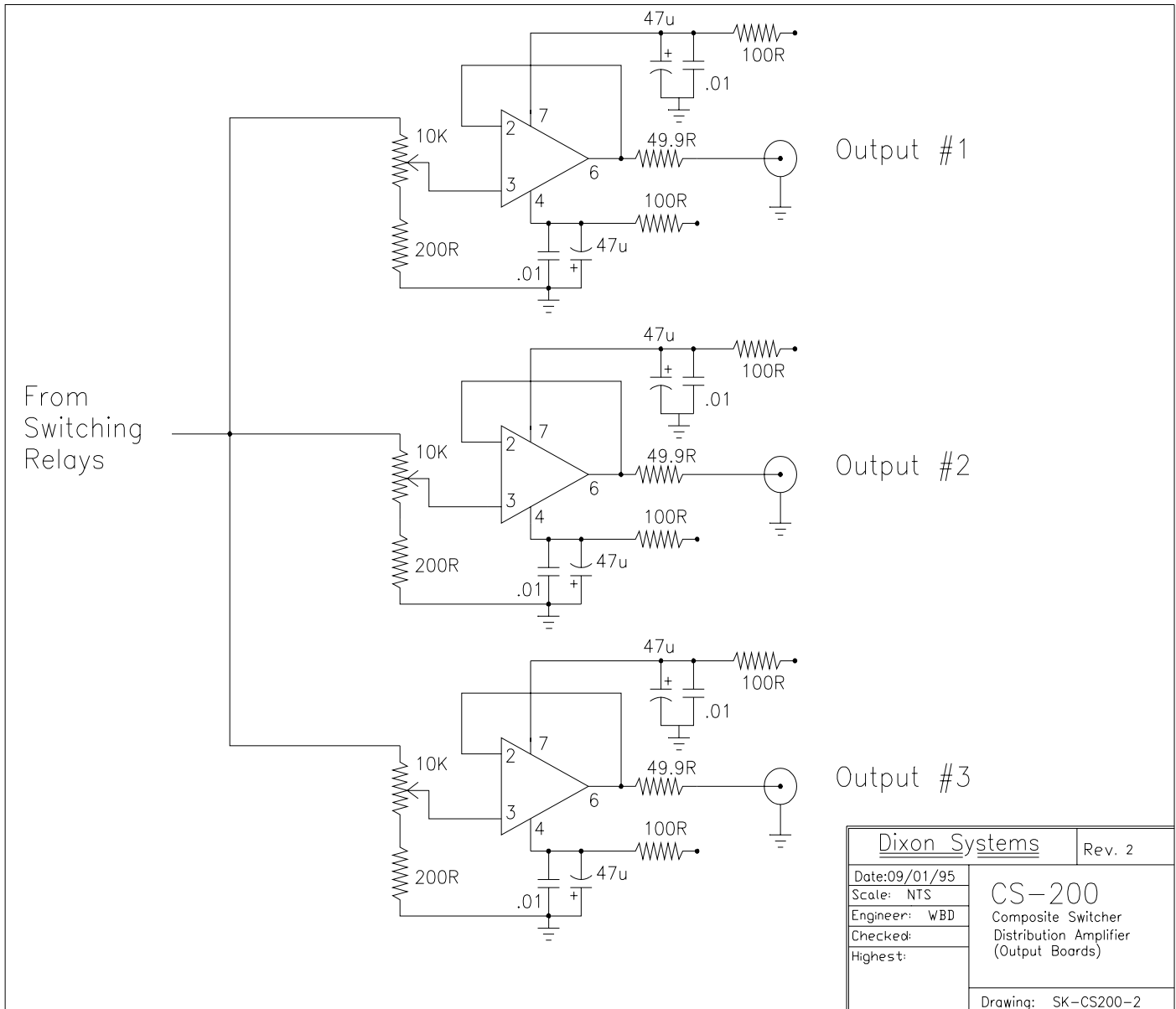
**1-9 Typical Performance:**



1-10 Schematic Diagrams:



Note that only a single channel is shown in the previous schematic. Shown below is the schematic for one of two output distribution amplifiers.



Dixon Systems		Rev. 2
Date: 09/01/95	Scale: NTS	<b>CS-200</b> Composite Switcher Distribution Amplifier (Output Boards)
Engineer: WBD	Checked:	
Highest:		
Drawing: SK-CS200-2		

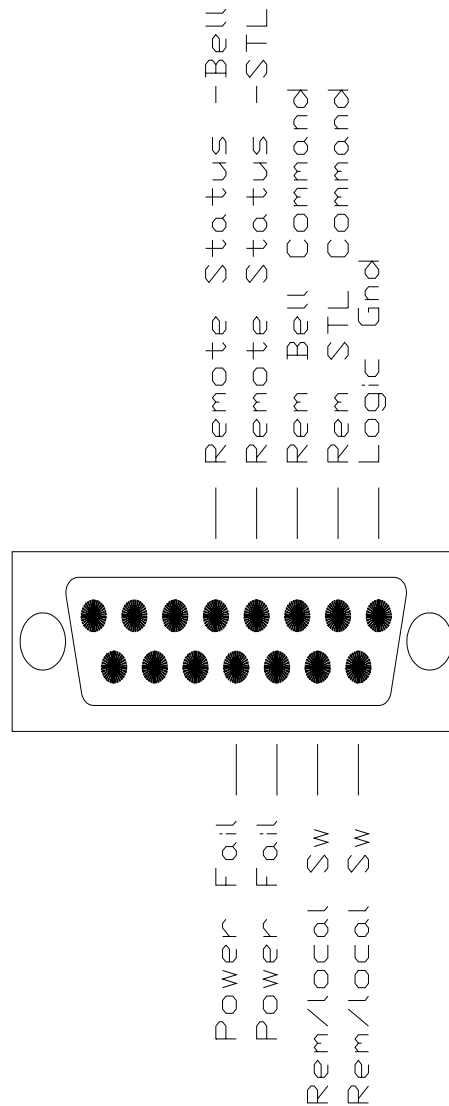
## Remote Connector Pin-out CS-200

N.B.: Remote/Local Switch is NC in Remote Pos.

Power Fail contacts are NC with power on.

Status may be used either Hi or low depending on plant system

Connector as viewed from rear panel



### 1-11 Remote Connector Pinouts:

Pin 1	Logic Ground
Pin 2	Remote STL Command (Ground start)
Pin 3	Remote Telco/Bell Command (Ground start)
Pin 4	Remote Status - STL (Low when active)
Pin 5	Remote Status - Telco/Bell (Low when active)
Pin 6	NC
Pin 7	NC
Pin 8	NC
Pin 9	Remote/Local contact (connect to "Go-Home" system)
Pin 10	Remote/Local contact (connect to "Go-Home" system)
Pin 11	Power fail
Pin 12	Power fail
Pin 13	NC
Pin 14	NC
Pin 15	NC

**Notes:**

**Dixon Systems**

580 Danforth Road  
Toronto, Ontario, Canada  
M1K-1E3

E-mail: [helpdesk@dixonsystems.com](mailto:helpdesk@dixonsystems.com)  
URL: <http://www.dixonsystems.com>