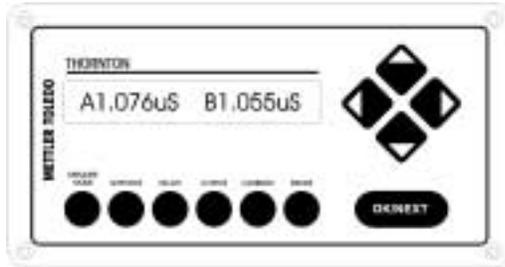


## 200CR Conductivity/Resistivity Instrument Initial Set-Up



200CR Front Panel

The keypad has 6 keys which access specific menus as follows:

- measure** - menus to change measurement modes.
- setpoint** - menus for programming setpoints.
- relays** - menus for programming relays.
- outputs** - menus for programming outputs.
- calibrate** - menus to perform calibration.
- menus** - all other menus (cell constants, security, averaging, compensation, etc.)

The control keys which are used to make changes within a menu are:

- OK/Next** is used to accept a selection and proceed to the next menu level.
- Up arrow** is used to scroll up through a list of options (& increase numbers).
- Down arrow** is used to scroll down through a list of options (& decrease numbers).
- Left arrow** is used to move the cursor to the left within a menu.
- Right arrow** is used to move the cursor to the right within a menu.

Each digit can be scrolled through the values: . (decimal point), 0, 1, 2, 3, 4, 5, 6, 7, 8 and 9. The first digit of each number can also be set to neg.(-)

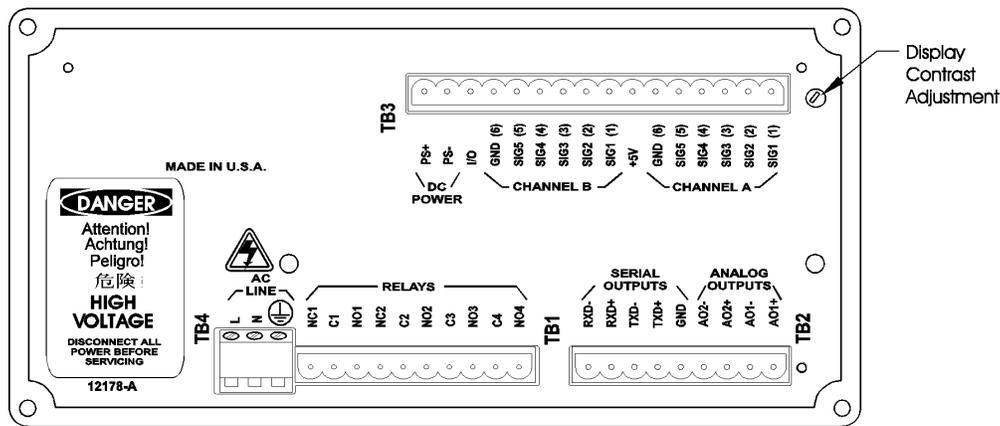
### **Following are the steps necessary to install a 200CR instrument and begin operation.**

1. Instrument installation - (Chapter 2)  
The 200CR can be panel, pipe or wall mounted and a sealed IP65 rear cover is optional but is required for wall and pipe mounting. Drill holes in the rear cover as needed for conduit or cable grips.
2. Wiring - (Chapter 2)  
Make all necessary electrical connections to the instrument. The wiring procedure is outlined on the back of this sheet.
3. Instrument Calibration - (Chapter 8)

This instrument is factory calibrated within specifications and does not require re-calibration. If Quality Assurance requirements call for verification, follow the procedures in the manual.

4. Connect sensors to patch cords.
5. **IMPORTANT:** Enter cell (sensor) constants for resistance and temperature for each channel.
  - Press **menus** key then use arrow keys until:
  - Press **OK/NEXT** key
  - Select (**A Cell, A Temp, B Cell, B Temp**) using up and down arrow keys
  - Shift cursor using the right arrow key to enter **M**, the multiplier.
  - Shift cursor using the right arrow key to enter the precise value of the cell constant found on the sensor.
  - Shift cursor back to the first field and repeat the above procedure for each of the other three constants.
  - Press the **OK/NEXT** key
  - Press the **OK/NEXT** key
6. Select desired measurements for each sensor
  - Press **measure** key  
Channel Primary (A,B) settings:  
For resistivity, ohm-cm (Auto) - recommended.  
For conductivity, S/cm (Auto) - recommended.  
*By selecting Auto, the instrument will automatically scale the sensor value to be read by the instrument.*  
Channel Secondary (a,b) settings:  
Secondaries are usually temperatures (°F, °C)
  - Press the **OK/NEXT** key once all 4 measurement selections are made.
  - Press the **OK/NEXT** key to save changes.
7. Program the analog outputs. (Chapter 7). Do not calibrate analog outputs.

For additional information refer to Manual 84295. For coverage of digital RS232/RS422 communications refer to Manual 84364.



200CR Back Panel

**Warning: Make sure power to all wires is turned off before proceeding with the power installation. High voltage may be present on the input power wires and relay wires.**

Terminal Block TB1

200CR models 6220 and 6222 have 2 relays  
 200CR model 6224 has 4 relays  
 The wiring sequence is shown in the table below.  
 Relays 3 and 4 are solid state, for AC only. Refer to Manual Chapter 2.

TB1 Label	Input Power & Relay Function
L	115V/230VAC Line
N	115V/230VAC Neutral
⊕	Earth Ground
NC1	Relay 1: Normally Closed
C1	Relay 1: Common
NO1	Relay 1: Normally Open
NC2	Relay 2: Normally Closed
C2	Relay 2: Common
NO2	Relay 2: Normally Open
C3	Relay 3: Common
NO3	Relay 3: Normally Open
C4	Relay 4: Common
NO4	Relay 4: Normally Open

AC Power Voltage and Frequency

To change the power voltage and frequency from factory settings refer to Manual Chapters 2 and 4 respectively.

Output Connections

Connections for all outputs are made to terminal block TB2. The serial port can be configured as an RS-232 port or an RS-422 port. Analog outputs, if included, are powered. Do not connect circuits that provide external power.

Output Connections continued

TB2 Label	RS232 Function	RS422 Function
RXD-	Receive Data	Receive Data -
RXD+	Not Used	Receive Data +
TXD-	Transmit Data	Transmit Data -
TXD+	Not Used	Transmit Data +
GND	Ground*	Not Used
AO2-	Analog Output 2 -	
AO2+	Analog Output 2 +	
AO1-	Analog Output 1 -	
AO1+	Analog Output 1 +	

\*For RS232 only.

**CAUTION: Do not connect analog output wiring shields to adjacent GND terminal. Connect them to AC-power earth ground terminal only.**

Sensor Connections

Wire sensor patch cord leads as shown below.  
**Warning: Miswiring patch cords may damage sensors. Blue wire #7 is not used. Leave clear shrink tube in place over it.**

TB3 Label	Wire Color	Sensor Connection
GND(6)	BLACK	Channel B Sensor Connections
SIG5(5)	RED	
SIG4(4)	GREEN	
SIG3(3)	WHITE	
SIG2(2)	CLEAR	
SIG1(1)	WHT/BLUE	Channel A Sensor Connections
GND(6)	BLACK	
SIG5(5)	RED	
SIG4(4)	GREEN	
SIG3(3)	WHITE	
SIG2(2)	CLEAR	
SIG1(1)	WHT/BLUE	