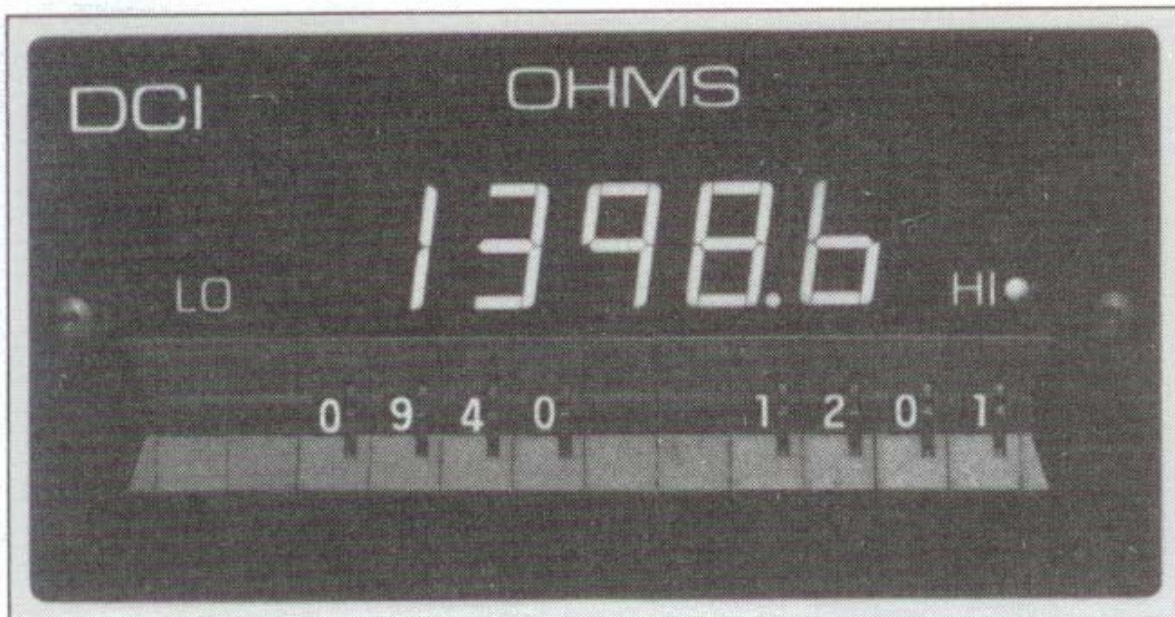


# 4 1/2 DIGIT OHMMETER/CONTROLLER



## SERIES 210/220C

### FEATURES

- ASCII RS232 Interface (optional)
- Analog output, 4-20mA or 0 to  $\pm 10$  VDC (optional)
- High/Low set point controller (Series 220C)
- Heavy duty relay output
- .0001 ohm resolution (2 ohm range)
- Large (.56" high-efficiency LED display
- Low sense current
- Two wire or optional four wire hookup
- Optional latchable three state parallel BCD outputs with single line enable.

A dual or single set point comparator and digital ohmmeter in one package make this unit useful for applications such as production testing and quality assurance. The 210C/220C has system inputs so it can be used as part of an automated test system or as a stand-alone unit. In operation a precise current is passed through the unknown resistance and the voltage dropped across that resistance is then measured by the voltmeter which reads out directly in ohms.

**I/O connectors:** #4 screw terminals for 115V power and the analog input. All other inputs and outputs via card edge connector with solder tabs. (Supplied)

**Outputs:**

ASCII RS232 compatible (optional); format: 1 start bit, 8 data bits, 1 stop bit, and no parity bits.

BCD outputs (optional); latched 3 state + 8421 TTL logic level for each digit plus overrange and polarity. Will drive 4 TTL loads.

4-20mA output (optional); maximum load 500 ohms. Offset and span programmable via solderless jumpers and potentiometers.

Analog output (optional): 1mV per digit into 10K ohm (maximum 10 volts).

EOC; 1 millisecond negative going TTL compatible pulse (optional).

5 Volt logic level output for "LO", "IN", and "HI", will drive three TTL loads.

Form C relay closure for each limit. Contact ratings 6 amps @ 28VDC or 2.5 amps @ 115VAC resistive or 1 amp @ 230VAC resistive.

**Power:**

115VAC 50-400 hz, 8 watts maximum

230VAC 50-400 hz, 8 watts maximum (optional)

10-30VDC 500 mA max. (optional)

5VDC 600 mA max. (optional)

**Operating temperature:** -20° to +60° Celsius.

**Case size:** "B" See page 39.

**I/O connectors:** #4 screw terminals for power and the analog input. All other inputs and outputs via card edge connector with solder tabs. (Supplied)

**OPTIONS**

- 01 Latched, parallel BDC outputs, Three state TTL compatible.
- 03 No set point. Select single limit model. Option 10 N/A with this option
- 04 4 wire hookup
- 05 5VDC input power. 600mA maximum required.
- 07 7 1/2 conversions per second
- 08 4-20mA output, max load 500ohms
- 09 Analog output, tracks input. (Max. 10VDC into 10Kohm).
- 10 ASCII RS232 computer interface
- 11 Dead zone (LSD) for 5 1/2 digit display



Systems outputs include latchable three state parallel BCD outputs that are TTL compatible and will drive up to 4 TTL loads. The three state outputs allow the output lines to be wired in parallel with other outputs and then called up using the single line enable thereby reducing required wiring. The hold/convert line allows single conversion capability greatly enhancing systems uses.

## **SERIES 210C & 220C SPECIFICATIONS**

**Accuracy:**  $\pm .05\%$  reading  $\pm 2$  counts @ 25°C plus temperature coefficient of 25PPM/° C.

**Input protection:** 30V peak without damage to unit.

**NMRR:** 70db; **CMRR:** 70db.

Front panel controls: Thumbwheel switches 4 1/2 digits, 0-9 for each limit.

**Inputs:** Three state input: (01 option only) Requires logic level zero. Forces BCD outputs to a high impedance state for bussing applications. Input loading 1LPTTL load. Pulled up internally with 20Kohm resistor.

Latch input: (01 option only) Requires logic zero. Latches BCD data without affecting display. Data will be held as long as latch is held low. Input loading 1 LPTTL load. Pulled up internally with 20Kohm resistor.

External convert/hold: Requires logic zero to hold. For single conversion, hold must be allowed to go high for a minimum of 10 milliseconds and a maximum of 100 milliseconds. For continuous run operation hold must be left open or high. Input loading 1 LPTTL load.

**Visual indicators:** 4 1/2 digits .56" high-efficiency LED. Decimal points programmable on rear connector. Red LED dots for "LO" and "HI". Both dots are out for "IN" condition.

**Conversion rate:** Three per second standard, optional seven and one-half per second.

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- 18 Dead zero (LSD) for 3 1/2 digit display
- 20 EOC pulse; 1msec; Negative going TTL compatible.
- 22 230VAC; 50-400hz input power.
- 23 Green display LED's
- 24 10-30VDC input power. 500mA max.
- 25 Logo and/or nomenclature change                      One time charge  
Special artwork to be    Plus per lens  
supplied by customer.
- 26 No logo.
- 27 Screw terminal I/O connector.
- 28 Blank lens.
- 32 "Ohms" legend.
- 33 "Kilohms" legend.
- 34 "Megohms" legend.
- 50 Sunlight readable .6" LED display.

**MODELS:**

Single Limit	Range	Sense Current
211C	2ohm	10mA
212C	20ohm	1mA
213C	200ohm	1mA
214C	2K	1mA
215C	20K	100µA
216C	200K	10µA
217C	2meg	1µA

Dual Limit	Range	Sense Current
221C	2ohm	10mA
222C	20ohm	1mA
223C	200ohm	1mA
224C	2K	1mA
225C	20K	100µA
226C	200K	10µA
227C	2meg	1µA

Note: Models 211C, 212C, 213C, 221C, 222C, and 223C include four wire hookup standard.