

4 1/2 DIGIT PANEL VOLTMETER/AMPMETER



SERIES 200C

FEATURES

- Analog output, 4-20mA or 0 to ± 10 VDC (optional)
- Optional TRMS AC Input
- 4 1/2 digits of display
- Input and power via screw terminals
- Easily scaled for reading out directly in engineering units
- Optional dead zero (LSD) for 5 1/2 digit display
- Optional latched three state parallel BCD outputs with single line enable
- High input impedance (10^9 ohms, DC input only)

The Series 200C is a 20000 count digital panel voltmeter with options for Analog outputs or TTL compatible three state BCD outputs. The unit is housed in a heavy duty all aluminum case with a big (.56") bright LED display. There are two standard ranges available but the unit can be easily rescaled in the field with solderless jumpers. Upon request, DCI will set up your special scale prior to shipment, for a nominal charge.

SERIES 200C SPECIFICATIONS

Accuracy:

$\pm .01\%$ reading ± 2 counts @ 25°C. Temperature coefficient of 25PPM/°C.

Input impedance: 10^9 ohms up to ± 5 VDC input voltage. Above 5VDC, 5megohms minimum.

Input bias current: 50pA typically.

Input voltage range:

0 to ± 20 volts, 0 to ± 200 millivolts on standard models, or up to 750 volts using factory installed scaling resistors. (See option -06)

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

Rollover error: 30 microvolts typically; 100 microvolts maximum.

Visual indicators: 4 1/2 digits. .56" red LEDs $\pm 1.9.9.9.9$

Decimal points programmable on rear I/O connector.

Inputs:

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 line must be left open or high. Input loading 1 LPTTL load.

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

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).

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

Power:

115VAC 50-400 hz	8 watts maximum
230VAC 50-400 hz	8 watts maximum (optional)
10-30VDC 500 mA maximum	(optional)
5VDC 600 mA maximum	(optional)

Case size: "B" See page 39.

Option 17 Specifications: (TRMS AC input)

Input Current: 100nA typically, 300nA maximum

Accuracy: $\pm 3mV \pm .31\%$ of reading @ 25°C (option 17J on models 204C, & 256C)

$\pm 2mV \pm .11\%$ of reading @ 25°C (option 17K on models 204C, 246C & 256C)

$\pm 3mV \pm .31\%$ of reading @ 25°C (option 17J on models 245C, & 255C)

$\pm 1mV \pm .21\%$ of reading @ 25°C (option 17J on models 205C, 247C, 255C & 256C)

Tempco: ($\pm .1mV \pm .01\%$ reading)/°C option 17J 0 to + 50°C

($\pm .05mV \pm .005\%$ reading)/°C option 17K 0 to + 50°C (204C, 244C, 246C, 254C)

($\pm .1mV \pm .005\%$ reading)/°C option 17K 0 to + 50°C (205C, 245C, 247C, 255C, 257C)

Add 15PPM/°C for units with over 7 Vrms input

Error vs Crest Factor:

0-7, 0-70, 0-700V	0-200mV
Crest factor 1 to 2	Specified accuracy Specified Accuracy
Crest factor of 3	-1.1% of reading -2.2% of reading
Crest factor of 7	-1% of reading -.5% of reading

Test condition: 1Vrms rectangular pulse input, pulse width 200 μ s on 0-7Vrms unit. On 200mV unit the input was a 200mVrms rectangular pulse, 200 μ sec width.

Input Resistance: 1 megohm

Input Frequency: 50 hz to 1000 hz.

Input settling time: 100msec with input above 100mVrms (204C, 246C & 256C)

750msec with input between 10mVrms and 100mVrms (204C, 246C & 256C)

100msec with input above 50mVrms (205C, 245C & 255C)

500msec with input between 10mVrms and 50mVrms (205C, 245C & 255C)

1sec with input below 10mVrms (205C, 245C & 255C)

Input Current: 100nA typically, 300nA maximum

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

OPTIONS

- 01 Latched, three state, parallel BCD outputs, TTL compatible.
- 04 Differential input. Requires three wire hookup; one for analog common and two for the differential input.
- 05 5VDC input power. 600mA maximum required.
- 06 Special scaling. Specify full scale input and desired reading, up to 750V peak. Zero offset no more than 5% of specified full scale. For higher zero offset consult factory.
- 07 7 1/2 conversions per second
- 08 4-20mA output, max load 500ohms
- 09 Analog output, tracks input. (Maximum 10VDC into 10Kohm).

- 11 Unregulated excitation output voltage 25VDC \pm 10% @ 100mA.
- 15 \pm 15VDC \pm 5% excitation output voltage @ 30mA per voltage
- 16 4-20mA input (specify scaling). Maximum 100ohm input resistance. Typically 50ohm.
- 17J True RMS AC Reading Meter.
- 17K True RMS AC Reading Meter.
- 18 Dead zero (LSD) for 5 1/2 digit display
- 19 Excitation output voltage to drive transducer. Normally set at 10VDC \pm 100mV \pm 10PPM/ $^{\circ}$ C. Will drive up to 100 ohm load. Other voltages available.
- 20 EOC pulse; 1msec; Negative going pulse.
- 22 230VAC; 50-400hz input power.
- 23 Green display LED's
- 24 10-30VDC input power. 500mA max.
- 25 Special legends and/or logo One time charge
(Special artwork to be supplied by customer). Plus per lens
- 26 No logo.
- 27 Screw terminal I/O connector.
- 28 Blank lens.
- 30 "MILLIVOLTS" legend
- 31 "D.C. VOLTS" legend
- 37 "D.C. AMPERES" legend
- 38 "PSIG" legend
- 39 "PSIA" legend
- 40 "PSI" legend
- 50 Sunlight readable .6" LED display. No polarity available.

Note: Option 08, 09, and 17J or 17K cannot be installed together.

MODELS:

- 204C \pm 19999, 0 to \pm 20 volts DC
- 205C \pm 19999, 0 to \pm 200 millivolts DC
- 206C \pm 19999, 0 to 5 Amps DC
- 207C \pm 19999, 0 to 200mAmps DC



REAR PANEL CONNECTORS PIN OUT AND DESCRIPTION

TB1

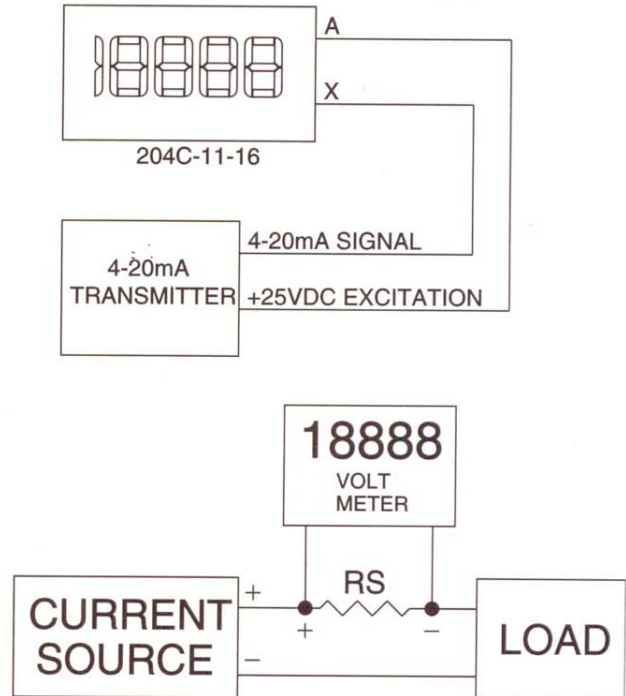
- W Analog input (LO)
- X Analog input (HI)
- Y Power supply input (Power in on DC models)
- Z Power supply input (Power return on DC models)

J1

Analog Output	1	A	Excitation Output
Analog Ground	2	B	-15VDC Out/Optional EOC Pulse
D.P. XXX.X	3	C	D.P. XX.XX
BCD Output Latch	4	D	External Convert/Hold
Tri-State Control	5	E	BCD Bit 1 Digit 5
BCD Bit 1 Digit 4	6	F	Polarity out
BCD Bit 8 Digit 4	7	H	Over-range out
BCD Bit 4 Digit 4	8	J	BCD Bit 1 Digit 3
BCD Bit 2 Digit 4	9	K	BCD Bit 8 Digit 3
BCD Bit 1 Digit 2	10	L	BCD Bit 4 Digit 3
BCD Bit 8 Digit 2	11	M	BCD Bit 2 Digit 3
BCD Bit 4 Digit 2	12	N	BCD Bit 1 Digit 1
BCD Bit 2 Digit 2	13	P	BCD Bit 8 Digit 1
Digital Common	14	R	BCD Bit 4 Digit 1
Digital +5VDC	15	S	BCD Bit 2 Digit 1

Card edge connector supplied.

CONNECTIONS OF A TWO WIRE 4-20mA TRANSMITTER TO MODEL 204C-11-16



BY USING SHUNT RESISTOR RS A VOLTMETER CAN BE USED AS A AMMETER BY MEASURING THE VOLTAGE DROP ACROSS RS