

1- or 2-Channel Circular Recorders

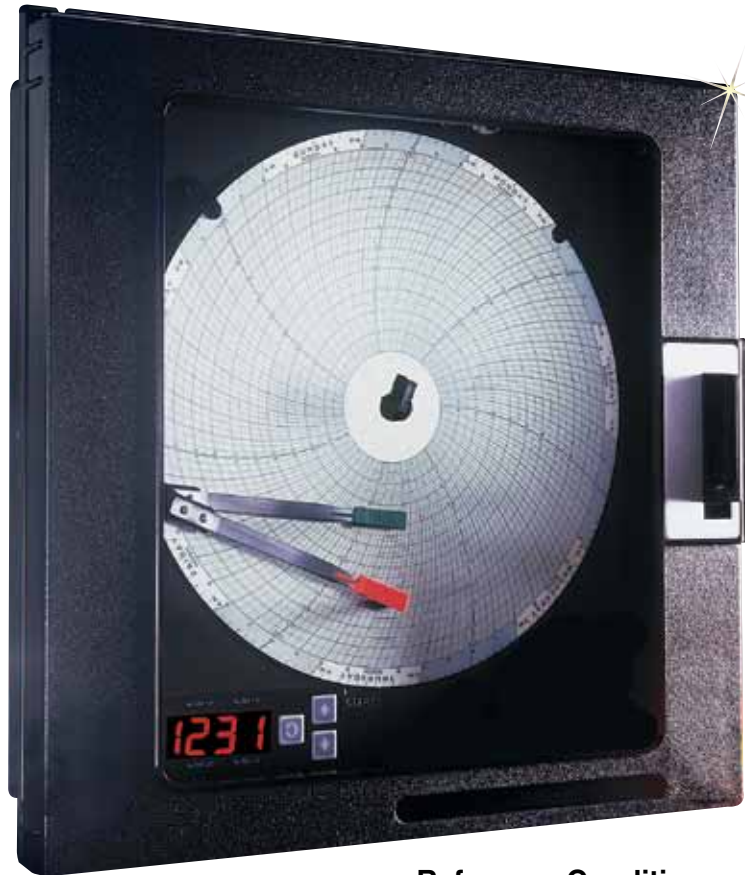
CT5100 Series



Optional†

- ✓ 254 mm (10") Chart
- ✓ 1- or 2-Pen Versions
- ✓ Programmable
Inputs: Thermocouple,
RTD, DC Current,
or Voltage
- ✓ 4-Digit, 14 mm H (0.56")
LED Display

CT5100 Series circular chart recorders can measure and display up to 2 process variables. Choose from a variety of programmable inputs. All recorder and alarm functions are easily configured with the 3 front-panel keys. Required panel depth is only 64 mm (2.5"), with only a 33 mm (1.3") protrusion.



CT5110 shown smaller than actual size.

Specifications

Inputs:

Input Types/Range:

Thermocouple: J, K, T, R, S

RTD: 100 Ω platinum,
0.00385 $\Omega/\Omega/^\circ\text{C}$

DC Current: 0 to 20 mA,
4 to 20 mA; internal 4.7 Ω
shunt resistor

DC Voltage: 0 to 25 mV,
0 to 50 mV, 10 to 50 mV, 0 to 5 V,
1 to 5 V

Impedance: >100 M Ω for T/C and
mV inputs, 100 k Ω for 5 V inputs,
4.7 Ω for μA inputs

RTD Excitation Current:
150 μA , typical

Input Scan Rate: 1 scan per second for
non-RTD inputs; 1 scan per
1.2 seconds for RTD inputs

Input Correction:
Offset adjustment: 999 to 999 units

Sensor Fault Detection:
Display goes to "SnSr" and pen
goes up-scale if a sensor break is
detected. No sensor break can be
detected for zero-based volt and milliamp
ranges. Display goes to
"Hi" 10% above span; display goes
to "Lo" 10% below span or zero,
whichever is higher.

Input Performance

Under Reference Conditions:

Measurement Error:

Type J, K, T, R, S and RTD: $\pm 0.25\%$
of span ± 1 degree; mA, mV and Vdc:
 $\pm 0.25\%$ of scaled span plus 1 least-
significant digit

Cold-Junction Compensation Error:
 $\pm 0.2^\circ\text{C}$ @ 25°C ($\pm 0.36^\circ\text{F}$ @ 77°F)

**Cold-Junction Compensation
Rejection:** 0.04 $^\circ\text{C}$ deviation
from 25°C (0.07 $^\circ\text{F}$ from 77°F)

Linearization Error:

T/Cs: $\pm 0.25^\circ\text{C}$ (0.45 $^\circ\text{F}$) typical,
 $\pm 0.5^\circ\text{C}$ (0.9 $^\circ\text{F}$) worst case

RTDs: $\pm 0.1^\circ\text{C}$ (0.18 $^\circ\text{F}$) typical,
 $\pm 0.3^\circ\text{C}$ (0.54 $^\circ\text{F}$) worst case

Ambient Temperature Error:

$\pm 0.01\%$ of span per $^\circ\text{C}$ (1.8 $^\circ\text{F}$) deviation
from 25°C (77°F)

Common Mode Rejection:

>120 dB @ 50/60 Hz, 260 Vac max

Normal Mode Rejection:

85 db minimum @ 60 Hz or greater

Isolation: 350 Vac, 500 Vdc; inputs
share a common signal ground

Reference Conditions:

Ambient Temperature: 25°C (77°F)

Relative Humidity: 60 to 70% RH

Supply Voltage: 115 Vac, 60 Hz

Source Resistance:

<10 Ω for T/C input

Lead Resistance: <0.1 Ω (Pt100)

Recording:

Pen Type: Disposable fiber tip

Pen Color: Pen 1—red; pen 2—green

Chart Size: 254 mm D (10")

Chart Drive: Stepper motor

Chart Rotation: User configurable:
8 hours, 12 hours, 24 hours, 48 hours
or 7 days

Chart Span: Bottom and top of span,
-9999 to 9999 units

Recording Performance:

Chart Recording Accuracy:

0.5% of chart span reference accuracy

Chart Rotation Accuracy:

$\pm 0.5\%$ of rotation time, assuming
all backlash removed

Operator Interface

Display: 4-digit, 14 mm H (0.56"),
red, 7-segment, LED display

Status Indicators: 5 red LED alarm
status indicators, 1 green LED pen
2 indicator

†Refer to footnote on next page for CE
ordering information.

Ranges

Sensor Type	Sensor Specs	Code	Reference Range °C	Reference Range °F
T/C	Iron-constantan	J	0 to 760	0 to 1400
	CHROME [®] -ALOMEGA [®]	K	0 to 1360	0 to 2500
	Copper-constantan	T	-200 to 400	-330 to 752
	Platinum 13% rhodium-platinum	R	200 to 1650	400 to 3000
	Platinum 10% rhodium-platinum	S	200 to 1650	400 to 3000
RTD	100 Ω platinum, 0.00385 Ω/Ω/°C	Pt100	-140 to 400	-220 to 752

Keypad: 3 keys for programming and unit operation

Display Modes: Normal: process value(s) or blank

Alarms

Number: Up to 2 process alarms for each of 2 inputs

Type: Process high or low

Limit Device: Optional high/low limits for each input with latching output; normally open output latches open; red reset button to the right of the display

Hysteresis: Fully adjustable, 0 to 200 units, single sided

Security: Alarm setpoint changes can be prohibited

Sensor Fault Action: Alarm works normally in "Hi" and "Lo" conditions; alarm relays are de-energized in a "SnSr" sensor break condition

Relay Outputs:

Relays: SPDT; contacts rated 5 A resistive @ 115 Vac, 2.5 A resistive @ 230 Vac, ½ hp @ 230 Vac (single phase), 250 VA @ 115/230 Vac

Power Requirements:

Line Voltage: 90/264 Vac, 50/60 Hz; optional: 20 to 50 Vac, 50/60 Hz, or 22 to 65 Vdc

Power Consumption: 18 VA max

Construction:

Enclosure: Injection-molded Noryl[®] case and cover with acrylic window

NEMA Rating: NEMA 3 (IP54)

Conduit Openings: 3 openings on the right side

Mounting: Panel or wall

Overall Dimensions: 355.6 W x 355.6 H x 96.5 mm D (14 x 14 x 3.8")

Panel Cutout: 322.58 W x 322.58 mm H (12.7 x 12.7")

Panel Depth: 64 mm (2.5")

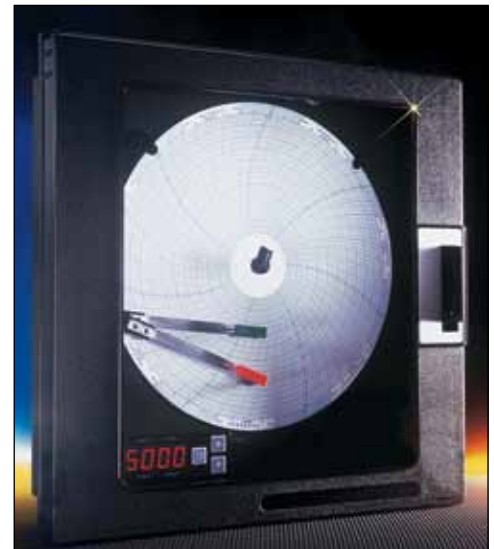
Panel Protrusion: 33 mm (1.3")

Weight: 8.8 kg (15 lb) max

Retrofit: With adaptor plate, will fit CT7000 cutout



OMEGACARESM extended warranty program is available for models shown on this page. Ask your sales representative for full details when placing an order. OMEGACARESM covers parts, labor and equivalent loaners.



CT5100 shown smaller than actual size.

Environmental and Operating Conditions:

Operating Temperature: 0 to 50°C (32 to 122°F)

Storage Temperature: -40 to 65°C (-4 to 149°F)

Humidity: 10 to 90% RH, non-condensing

General Reference Data:

Data Backup: EEPROM for configuration parameters and calibration data; EEPROM for alarm setpoints

Approvals and Compliance:

Safety:

UL Approved for USA: UL 1092, UL 916 and QUXY, pending

UL Certified for Canada: CSA Spec 142, pending

Limit/Device: FM, pending

Accessories

Model No.	Description
CT7000-GREEN	Green pens, pkg. of 5, channel 2 only
CT7000-RED	Red pens, pkg. of 5, channel 1 only
CT7000C-0-100/24	Circular paper, 100 qty., 24-hr
CT7000C-0-100/7	Circular paper, 100 qty., 7-day
CT7000C-0-300/24	Circular paper, 100 qty., 24-hr
CT7000C-0-300/7	Circular paper, 100 qty., 7-day
CT7000C-0-2500/24	Circular paper, 100 qty., 24-hr
CT7000C-GENERIC/24HR	Circular paper, 100 qty., 24-hr

Note: Other ranges available. Consult Sales for details.

To Order Visit omega.com/ct5100 for Pricing and Details

Model No.	Description
CT5100	1-pen recorder
CT5101	1-pen recorder with 1 alarm relay
CT5102	1-pen recorder with 2 alarm relays
CT5100-LOCK	1-pen recorder with door lock
CT5110	2-pen recorder
CT5112	2-pen recorder with 1 alarm relay per channel
CT5114	2-pen recorder with 2 alarm relays per channel
CT5110-LOCK	2-pen recorder with door lock

Comes complete with package of paper, 1 pen per channel and operator's manual. For transmitter power supply, add "-XPS" to model number.

To order CE approval, add suffix "-CE" to model number.

Ordering Examples: CT5100, 1-pen recorder and CT7000C-0-100/7, 100 sheets of chart paper.

CT5102, 1-pen recorder with 2 alarm relays.

OCW-1 OMEGACARESM extends standard 2-year warranty to a total of 3 years.