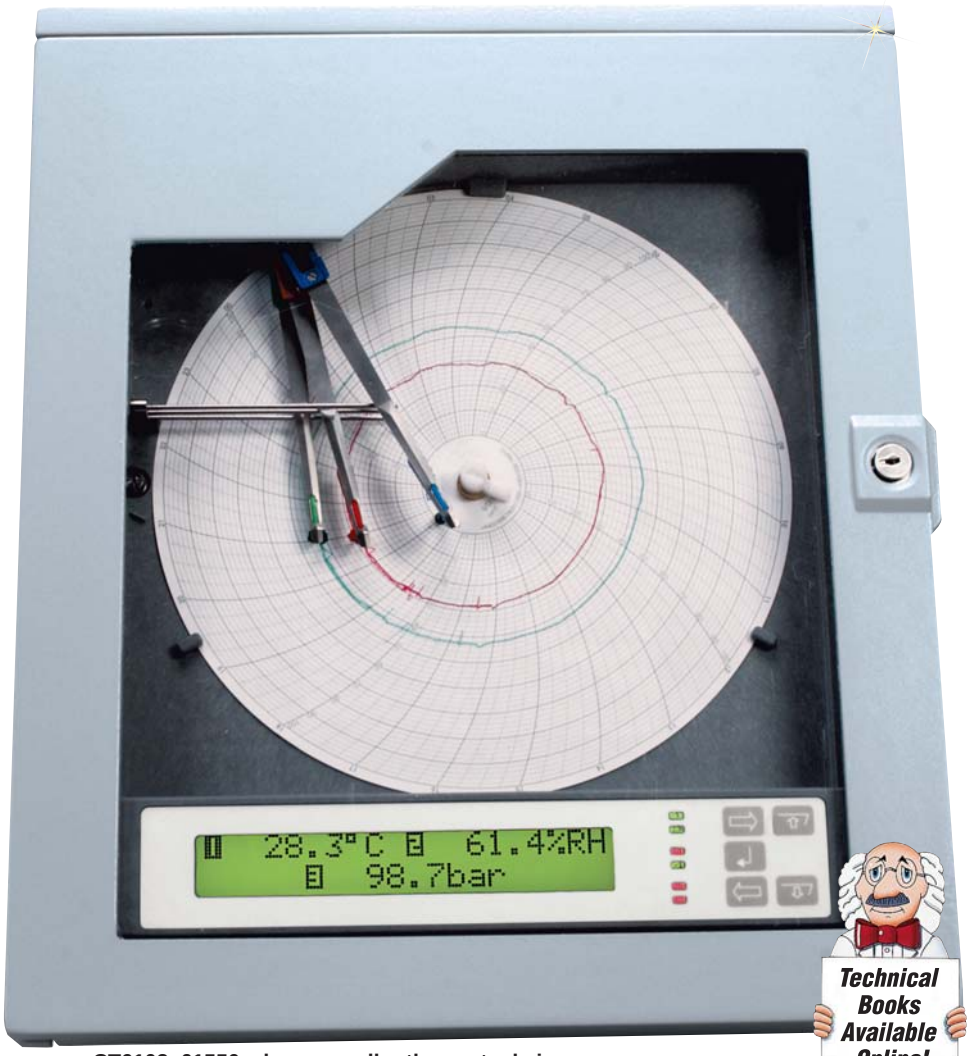
Microprocessor-Based Circular Chart Recorder

CT6100 Series Starts at

£1000

- **Accepts Thermocouple, RTD, Vdc, and mA DC Inputs**
- **High Accuracy and Stability**
- **User Configurable via Front-Panel Keypad**
- **Easy-to-Use Menu-Driven Interface for Rapid Configuration and Calibration**
- **Available in 1-, 2-, or 3-Pen Versions**
- **Large-Character Alphanumeric LCD with Backlight**
- **Simultaneous Digital Display of Process Variable for Each Channel**
- **Programmable Locks for Security**



CT6103, £1550, shown smaller than actual size.

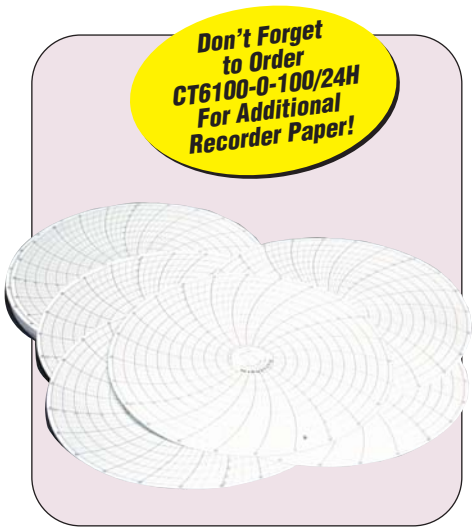
The CT6100 Series microprocessor-based circular chart recorders are available in 1-, 2-, or 3-channel variants. They combine the simplicity and clarity of pen drawing with the versatility of microprocessor control. Each channel is compatible with all industry-standard sensors and signals, including thermocouple Types J, K, T, E, N, R, S, and B; Pt100 platinum RTDs; and 4 or 20 mA current loops.

Low and high measurement ranges are provided for each input type; separate range cards are not required. Multi-input versions feature optoelectronic isolation of the input stages to eliminate troublesome installation ground loops. Multislope integrating 16-bit A/D converters ensure precise measurement by sampling the input every 0.5 seconds. Thermocouple and RTD characteristics are fully linearised. The recorders use automatic cold-junction compensation for thermocouple measurement.

All CT6100 Series models feature alarm relays. Single-pen recorders are equipped with 3 fail-safe single-pole changeover relays; 6 relays are standard on the 2- and 3-pen versions. Color-coded LEDs indicate the status of each relay. All relay functions are user selectable; setpoint values and hysteresis levels are entered directly via the keypad, while relay action and channel assignment are selected from user-friendly menus. Circuit precision is matched by the backlash-free pen-drive mechanism, which has a positioning resolution greater than 0.1%. An integral feedback potentiometer enables closed-loop monitoring of each pen position.

Each recorder uses a low-maintenance stepper motor. The rotation speed of the 244 mm diameter chart is microprocessor controlled and user programmable.

All CT6100 recorders are housed in a strong molded case that can be panel or surface mounted. A gasket-lockable door protects internal components from harsh industrial environments and offers protection rated to IP55 (NEMA 12). A tough acrylic window lets the user view the chart trace, digital channel readings, and alarm status with the recorder's door closed.



Specifications

Inputs: 1, 2 or 3
Input Signals: Thermocouple Types K, T, J, N, E, B (standard), R and S; platinum RTD (Pt100) 3-wire
DC Voltage: ±2 V, 20 V
DC Current: ±2 mA, ±20 mA
Temperature Ranges: Thermocouples to BS4937 [Type B minimum temp 200°C (572°F)]; RTD to BS1904; 1984 high- and low-measurement ranges for each input
Cold-Junction Comp: Automatic, using Pt1000 temperature detector and software correction
Linearisation: Automatic; software linearisation to BS4937 (T/C) and BS1904; 1984 (RTD)
Input Resistance T/C: 10 MΩ
±2 mA: 200 Ω
±20 mA: 20 Ω
±2 V, +20 V: >1 MΩ
Minimum Span: 5°C (90°F) (thermocouples K, J, T, E, N and RTD)
Thermocouple Burnout: Pull-up or pull-down, link selectable
RTD Current: Approx 1 mA
RTD Lead Resistance: 3-lead connection, compensated up to 10 Ω maximum per lead
Input Protection: ±50 Vdc on signal inputs
Input Isolation: Optoelectronic on 2- and 3-input versions; 500 Vrms channel-to-channel, 500 Vrms channel-to-earth

Performance

Accuracy:
RTD:
Low Range:
[<200°C (392°F)] ±0.2°C (3.6°F)
High Range:
[<200°C (392°F)] ±0.8°C (1.6°F)
Ambient: 20°C (68°F)
Thermocouple: ±0.25% FS
Linear: ±0.2% FS
Temperature Stability: ±0.02% FS/°C
Cold-Junction Comp Stability: ±0.02°C/°C
Linearisation Accuracy:
Thermocouple:
Types J, K, T, N, E:
±0.1°C -50/200°C, ±1°C max
Types R and S:
±0.2°C -50/200°C, ±1°C max
Type B: ±1°C max
RTD: Pt100, better than ±0.1°C -200/850°C
Calibration Shift (T/C and RTD): ±10°C (18°F), user programmable to eliminate sensor errors

Chart and Display

Chart Size: 244 mm (9.6") circular paper chart
Chart Divisions: 40, 50, 60, 70 or 80 linear divisions
Chart Drive: DC stepper motor
Chart Speeds: 1 to 24 hours in steps of 1 hour, 2 to 31 days in steps of 1 day
Writing Method: Disposable ink cartridges; pen 1—red, pen 2—green, pen 3—blue
Pen Positioner: DC stepper motor
Positioning Resolution: Better than 0.1% FS
Pen Response Time: Zero to full scale in 4.5 seconds
Pen Lift: Motorised, activated from front panel; chart fast-time advance possible with pens raised
Display Type: 2-line x 20-character LCD with backlight and automatic temperature compensation; 9.6 mm (0.4") high digits
Display Resolution: Temperature ranges 0.1°C, linear ranges software programmable
Alarm Display: Relay status shown by red and green front-panel LEDs

Relays

Number: 3 on single-pen version; 6 on 2- and 3-pen versions
Relay Actions: Software selectable: high alarm/low alarm/deviation alarm/control relay (high)/control relay (low); relays de-energise in alarm state
Assignment: Relays assignable to any channel
Hysteresis Level: User programmable from 0 to 10% of span
Relay Contacts: SPCO (silver alloy)
Switched Load: 150 W DC, 1660 Vac non-inductive
Switched Current: 6 A max
Switched Voltage: 30 Vdc, 250 Vac
Snubber Network: Standard

General

Security: 3-level software lock, including password protection, internal hardware jumper lock and lockable door
Power Supply: 115 or 230 Vac ±10%, switch selectable, 50/60 Hz
Power Requirement: <25 W
Operating Temperature: 0 to 55°C (32 to 131°F)
Operating Humidity: 0 to 90% RH (non-condensing)
Case: Steel case with glass-filled polyester/resin door with acrylic window
Protection: IP55 (NEMA 12)
Mounting: Panel or surface
Weight: 7 kg (15.4 lb), single-pen; 7.7 kg (17 lb), 3-pen
Dimensions: 396 H x 336 W x 171 mm D (16 x 13 x 7")
Panel Cutout: 356 H x 288 mm W (14 x 11")

MOST POPULAR MODEL HIGHLIGHTED!

To Order *(Specify Model Number)*

Model No.	Price	Description
CT6101	**£1000**	1-pen recorder with 3 relays and transmitter PS
CT6102	**1240**	2-pen recorder with 6 relays and transmitter PS
CT6103	**1550**	3-pen recorder with 6 relays and transmitter PS

Each unit comes with 1 pack of chart paper, pen(s) and complete operator's manual.
Ordering Example: CT6101,** 1-pen recorder with 3 relays and transmitter PS, **£1000.

Accessories

Model No.	Price	Description
CT6100-RED	**£11.50**	Red pens, pack of 3
CT6100-GREEN	**11.50**	Green pens, pack of 3
CT6100-BLUE	**11.50**	Blue pens, pack of 3
CT6100-0-100/24H	**16.75**	100 chart papers, 24 hours
CT6100-0-100-31D	**16.75**	100 chart papers, 31 days

Option

Model No.	Price	Description
-PV	**£95**	Analogue output of 0 to 20 mA or 4 to 20 mA, assignable to any channel

Option is not field installable. It must be ordered at the time of purchase.

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