

Cryogenic Digital Thermometers

For CY670 Series Diode Sensors
and Platinum Resistance Devices

OMEGAROMETER®

CYD211 and
CYD218 Series



CYD211 shown slightly
smaller than actual size.

- ✓ Single Input for Silicon Diode or RTD
- ✓ Large 5-Digit LED Display
- ✓ Retransmission Analog Output 0 to 10V or 4 to 20 mA
- ✓ RS232C Serial Interface and Alarm Relays

The CYD211 temperature monitor provides the accuracy, resolution, and interface features of a benchtop temperature monitor in an easy to use, compact instrument. With appropriate sensors, the CYD211 measures temperature from 1.4 to 800 K and in difficult sensing conditions, including high vacuum and magnetic fields. Standard features on the CYD211 include alarms, relays, user-configurable analog voltage or current output, and a serial interface. The CYD211 is an ideal choice for liquified gas storage/monitoring, cryopump control, cryo-cooler, materials science applications, and for applications that require greater accuracy than thermocouples allow.

Specifications

Thermometry

Number of Inputs: 1

Measurement Type: 4-lead differential

Excitation: Constant current,
10 μ A or 1 mA

Isolation: Measurement is not isolated
from chassis ground



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.

Supported Sensors:

Diodes: Silicon, GaAlAs;

RTDs: 100 Ω Platinum,
1000 Ω Platinum

Sensor Type Selection:

Front panel selectable

Temp. Range:

Silicon Diodes: 1.4 to 500 K

100 Ω PT: 30 to 800 K

Input Connector: DB-25

A/D Resolution: 24-bit

Input Accuracy: ± 10 mK @ 4.2 K

Msmt Resolution: 0.6 mK @ 4.2 K

Maximum Update Rate: 7 rdg per sec

User Curve: One 200-point

CalCurve or user curve

Front Panel

Display Type: 5-digit LED

Display Units: K, $^{\circ}$ C, $^{\circ}$ F, V, and Ω

Display Update Rate: Twice per sec

Temperature Display Resolution:

0.001 $^{\circ}$ from 0 to 99.999 $^{\circ}$, 0.01 $^{\circ}$ from
100 to 999.99 $^{\circ}$, 0.1 $^{\circ}$ above 1000 $^{\circ}$

Sensor Units Display Resolution:

Sensor dependent to 5 digits

Display Annunciators: K, $^{\circ}$ C, $^{\circ}$ F, V Ω

Interface

Serial Interface: RS232C (protocol and
sample programs included)

Baud: 9600

Update Rate: 7 readings per sec

Connector: 9-pin D style plug

Alarms:

 2-high and low

Settings: High setpoint, low setpoint,
dead band, latching or non-latching

Actuators: Display message, relays

Relays:

 2

Contacts: Normally open (NO),
normally closed (NC), and common (C)

Contact Rating: 30 Vdc at 1 A

Operation: With high and low alarms

Connector: DB-25 (included)

Analog Output:

Settings: Voltage or current, scale

Update Rate: 7 readings per sec

	Voltage	Current
Range	0 to 10V	4 to 20 mA
Accuracy	± 1.25 mV	± 2.5 μ A
Resolution	0.3 mV	0.6 μ A
Min Load	500 Ω	N/A

General

Ambient Temperature: 15 to 35 $^{\circ}$ C
(58 to 95 $^{\circ}$ F) at rated accuracy, 10 to
40 $^{\circ}$ C (50 to 104 $^{\circ}$ F) at reduced accuracy

Power Requirement: Unit comes
with a 100 to 250 Vac transformer
and 120 Vac power cord

Dimensions: 48 H x 96 W x 166 mm D
(1.89 x 3.78 x 6.53")

Mounting: Panel mount into
45 H x 92 mm W (1.77 x 3.62") cutout

Weight: 0.65 kg (1.5 lb)

To Order

Model No.	Description
CYD211	Single input, $\frac{1}{8}$ DIN, silicon diode monitor

Accessories

Model No.	Description
TP2111	Single $\frac{1}{4}$ DIN panel mount adaptor
TP2112	Dual $\frac{1}{4}$ DIN adaptor

Comes complete with sensor mating connector, 120V line cord, and operator's manual.

Note: Units are calibrated at no additional cost.

For 220 Vac option, add suffix "-220" to model number (included European line cord), no additional charge.

Ordering Example: CYD211, single input monitor. OCW-3, OMEGACARESM extends standard 1-year warranty to a total of 4 years.

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CYD218 Series Eight Inputs



- ✓ 8-Channel Input
- ✓ 8 Simultaneous Displays
- ✓ Range 1.4 to 800 K
- ✓ Serial Interface
- ✓ Alarms

The CYD218 Series has similar specifications to the CYD211 Series with the addition of 8 simultaneous displays. The displays are for silicon diodes or Pt RTD detectors, 16 high/low alarms, latching or non-latching relays, datalogging with memory, and printer output.

Specifications (CYD218S, CYD218E)

Input: 8 silicon diodes or RTDs

Output: RS232 serial Interface, alarms, datalogging, printer support (IEEE-488, relays, and analog output for CYD218S)

Data Memory: 1500 point storage non-volatile memory or continuous to computer

Silicon Diode: CY670 Series

Platinum Resistance Element:

100 Ω , 1000 Ω

Sensor Excitation: 10 μ A $\pm$ 0.2% DC for CY670, 1 mA $\pm$ 0.3%

Temperature Range: 1.4 to 475 K for

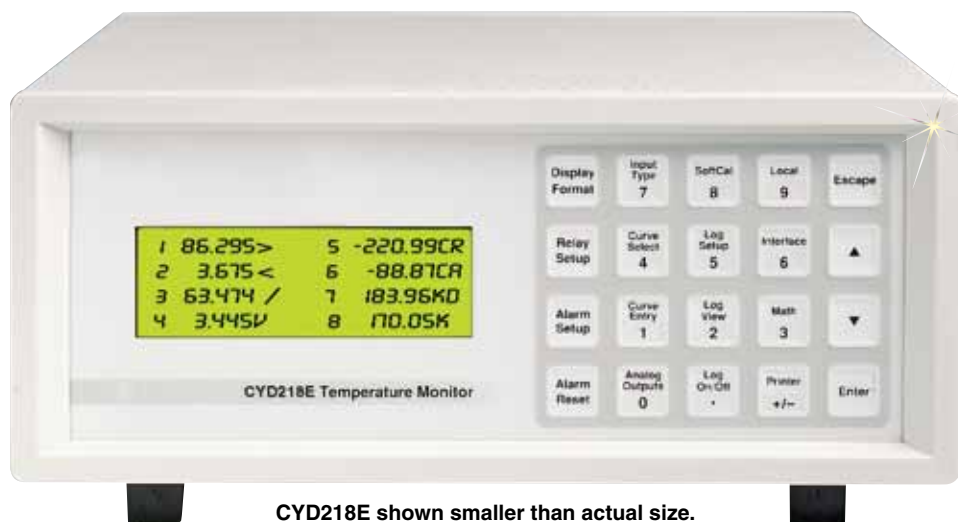
CY670, 1.4 to 800 K for Platinum RTD

Precision Curve Storage:

Curve 10 and DIN 43760



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CYD218E shown smaller than actual size.

Ambient Temperature: 15 to 35°C (58 to 95°F)

Electronic Accuracy: 0.011 K at 4.2 K

Display: 5 LCD display for each of 8 inputs simultaneously displayed

Display Resolution: 0.001 K

Units: K, °C, V or Ω

Measurement Type: 4 lead

Update Rate: 16 readings/sec

Power: 100, 120, 220, 240 Vac; +5 to 10%, 50/60 Hz

Size: 90 H x 217 W x 317 mm D (3.5 x 8.5 x 12") half rack

Weight: 3 kg (6.6 lb)

(PT-100)

Temperature Range:

14 to 873 K (673 for PT-111)

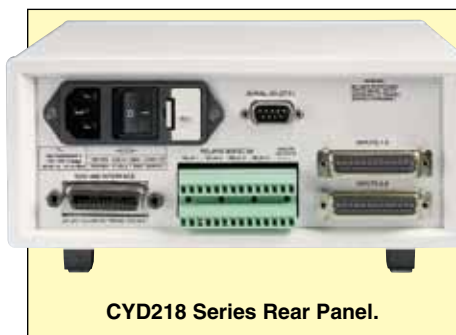
Standard Curve: DIN 43760

Leads: 0.25 D x 15 mm L (0.009 x 0.59")

Accuracy: Class B, $\pm$ 0.3°C (at 0°C)

Repeatability: $\pm$ 10 mK

Thermal Response: $\approx$ 2 sec



CYD218 Series Rear Panel.

To Order

Model No.	Description
CYD218E	8 RTD, 8 CY670, or 4 RTD and 4 CY670 temperature monitor, simultaneous display, RS232, datalogger, and printer output
CYD218S	CYD218E with IEEE-488, relays, analog output

Accessories* (Platinum Resistance Temperature Devices - RTD)

Model No.	Description
PT-102	RTD, 14 to 873 K (2 x 20.3 mm long, 250 mg weight)
PT-103	RTD, 14 to 873 K (1.8 x 12.1 mm long, 120 mg weight)
PT-111	RTD, 14 to 673 K (1.8 x 5 mm long, 52 mg weight)

* Shown on page T-5.

Comes complete with sensor mating connector, 120V line cord, and operator's manual.

Note: Units are calibrated at no additional cost.

Ordering Examples: CYD218E, monitor with eight inputs and PT-102, platinum RTD.

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