OMEGA™

X SERIES

4 and 8-Channel Thermocouple Data Logger with LCD Screen

INSTRUCTION SHEET

MQS-5830/0621

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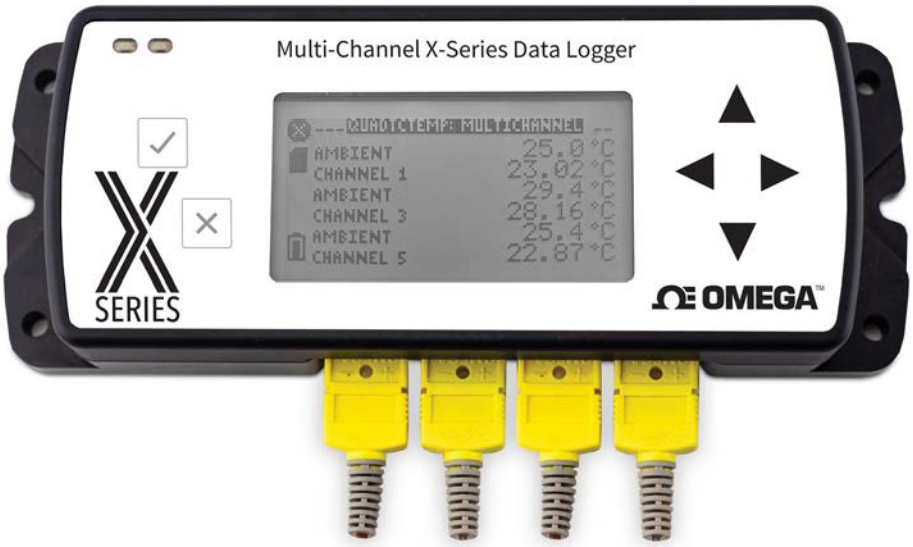


Quick Start Steps

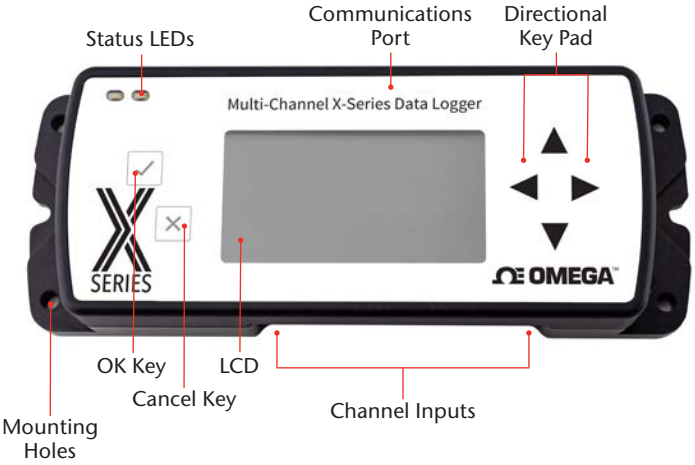
1. Install Omega OM-CP Data Logger Software (see specifications for compatible versions) and USB Drivers onto a Windows PC (Windows XP SP3/7/8/10).
2. Launch the Omega Software.
3. The OM-CP-QUADTCTEMP2000-A2 and OM-CP-OCTTCTEMP2000-A2 come with a USB cable. Plug one end of the cable into an available USB port on the PC and plug the opposite end of the cable into the communication port on the device. The drivers will install automatically.
4. The device will appear in the Connected Devices list, highlight the desired data logger. For most applications, select **"Custom Start"** from the menu bar and choose the desired start method, reading rate and other parameters appropriate for the data logging application and click **"Start"**. (**"Quick Start"** applies the most recent custom start options, **"Batch Start"** is used for managing multiple loggers at once, **"Real Time Start"** stores the dataset as it records while connected to the logger.) The status of the device will change to **"Running"**, **"Waiting to Start"** or **"Waiting to Manual Start"**, depending upon your start method.
5. Disconnect the data logger from the interface cable and place it in the environment to measure.
6. To download data, connect the logger to the interface cable. Highlight the data logger in the Connected Devices list. Click **"Stop"** on the menu bar. Once the data logger is stopped, with the logger highlighted, click **"Download"**. You will be prompted to name your report. Downloading will offload and save all the recorded data to the PC.

Note: The device will stop recording data when the end of memory is reached or the device is stopped. At this point the device cannot be restarted until it has been re-armed by the computer.

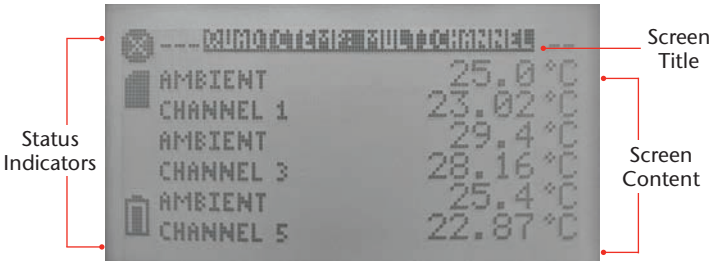
Product Overview

The OM-CP-QUADTCTEMP2000-A2 and OM-CP-OCTTCTEMP2000-A2 are four and eight channel thermocouple data loggers with an LCD screen. The device features on-screen minimum, maximum and average statistics, as well as a user configurable screen that allows for any combination of channels to be displayed. The device accepts J, K, T, E, R, S, B and N type thermocouples.

Display Overview



LCD Screen Overview

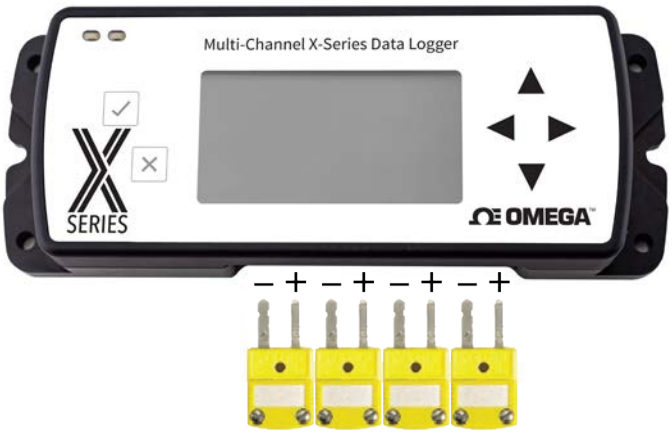


Status Indicators

- Battery Power (Full, Half-full, Empty)
- Memory Remaining (Empty, Half-full, Full)
- Device is running
- Device is stopped
- Delay Start
- Push-button (Manual) Start
- Device reset has occurred
- External power present

Thermocouple Connections

The OM-CP-QUADTCTEMP2000-A2 and OM-CP-OCTTCTEMP2000-A2 has 4 or 8 SMP connections. These connections allow the user to insert subminiature thermocouple plugs into the connectors on the device. The diagram below shows how to connect the individual thermocouples for each of the devices. *Warning: Note the polarity instructions. Do not attach wires to the wrong terminals.*



Thermocouple Channel Numbers

TC5	TC6	TC7	TC8
TC1	TC2	TC3	TC4

Installation Guide

Installing the Interface Cable
Insert the USB-A to micro USB cable (included) into a USB port. The drivers will install automatically.

Installing the Software
Insert the OM-CP Data Logger Software Flash Drive into an open USB port on a Windows PC. If the autorun does not appear, locate the drive on the computer and double click on **Autorun.exe**. Follow the instructions provided in the Installation Wizard.

Device Operation

Thermocouple Type
To change the thermocouple type:
1. In the **Connected Devices** panel, click the device desired.
2. On the **Device** tab, in the Information Group, click **Properties**. Or, right-click the device and select **Properties** in the context menu.
3. On the **General** tab, change the **Thermocouple type** in the drop down menu.
4. Apply these changes, there will be a prompt to reset the device, select **Yes**.

Please note that the same thermocouple type must be used on all of the channels.

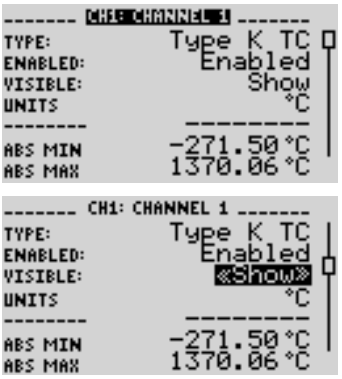
Downloading Data from a Data Logger
1. Connect the logger to the interface cable.
2. Highlight the data logger in the Connected Devices list. Click **Stop** on the menu bar.
3. Once the data logger is stopped, with the logger highlighted, click **Download**. You will be prompted to name your report.
4. Downloading will offload and save all the recorded data to the PC.

Device Functions

Channel Options

Each of the OM-CP-QUADTCTEMP2000-A2 and OM-CP-OCTTCTEMP2000-A2's channels have several options that are configurable by the user through the device's display screen menus and the software.

Show or Hide Channels on the Home Screen



The user may choose to either show or hide channels on the home screen.

To change channel visibility from the **Home Screen**:

1. Press ☑ to view first **channel screen**
2. Use ◄► to view additional channels
3. On desired channel screen use ▲▼ to highlight **Visible**
4. Use to choose **Show** or **Hide**
5. Press ☒ to return to the **Home Screen**

—OR—

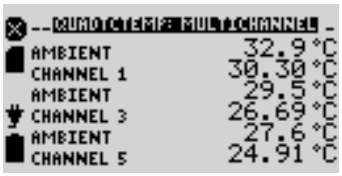
1. Use ▲▼ to highlight desired channel
2. Press ☑ to view channel screen
3. Use ▲▼ to highlight Visible
4. Use ◄► to choose Show or Hide
5. Press ☒ to return to the Home Screen

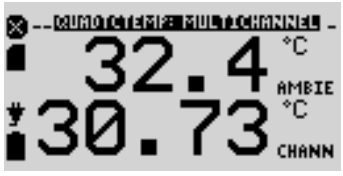
Change Channel Display Size

Channels may be viewed in a number of different sizes. The smallest size allows for an overview of several channels at once, while the largest gives at-a-glance access to one or two channels.

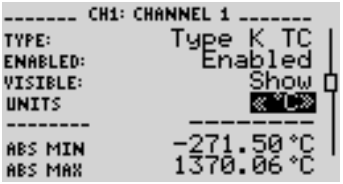
To change channel display size from the **Home Screen**:

1. Press ☒ to enter the **Main Menu**
2. Use ▲▼ to highlight **Setup Menu**
3. Press ☑ to enter the **Setup Menu**
4. Use ▲▼ to highlight **Channel Size**
5. Use ◄► to choose the desired channel size
6. Press ☒ once to return to the **Main Menu**
7. Press ☒ again to return to the **Home Screen**





Change Channel Units



Channels can be customized to display readings in a variety of convenient units. Units available for selection will vary according to channel type.

Note: *Changing display units will not affect logged data.*

To change channel display from the **Home Screen**:

1. Press ☑ to view first **channel screen**
2. Use ◀ ▶ to view additional channels
3. On desired channel screen use ▲ ▼ to highlight **Units**
4. Use ◀ ▶ to choose the desired unit option
5. Press ☒ to return to the **Home Screen**

—OR—

1. Use ▲ ▼ to highlight desired channel
2. Press ☑ to view **channel screen**
3. Use ▲ ▼ to highlight **Units**
4. Use ◀ ▶ to choose the desired unit option
5. Press ☒ to return to the **Home Screen**

Note: *Press ☒ to update all channels*.

LED Functionality

	Primary LED (Green): Flashes every 15 seconds when logging. Flashes every 5 seconds when in delay start. Flashes on key press.
	Secondary LED (Red): Flashes every 5 seconds when battery is low. Flashes every 5 seconds when memory is low.
	Channel LED (Blue): Flashes when taking a reading per channel.

Device Maintenance

Battery Replacement
Materials: 3/32 inch HEX Driver (Allen Key) and a Replacement Battery (OM-CP-BAT103) or any 9 V battery

1. Remove the cover from the device by unscrewing the two screws.
2. Remove the battery from its compartment and unsnap it from the connector.
3. Snap the new battery into the terminals and verify it is secure.
4. Replace the cover taking care not to pinch the wires. Screw the enclosure back together securely.

Note: Be sure not to over tighten the screws or strip the threads.

Recalibration
Recalibration is recommended annually for all Omega data loggers. The Properties window in the OM-CP Data Logger software displays the date of the last calibration and the date that the device is next due for calibration. The OM-CP Data Logger Software can also be configured to send an on screen notification prior to the calibration due date for each device. By default this is set to seven days prior to calibration due date and can be changed by the user by going to the file tab in the OM-CP Data Logger software and clicking on **Options**. Select device and check **"Display popup notification when a device nears its next calibration date"**. The user can then select the number of days before calibration due date to notify.

Specifications

INTERNAL CHANNELS			
Temperature Range	-20 °C to +60 °C (-4 °F to +140 °F)		
Temperature Resolution	0.01 °C (0.018 °F)		
Calibrated Accuracy	±0.5 °C (0 °C to 50 °C) ±0.9 °F (32 °F to 131 °F)		
REMOTE CHANNELS			
Remote Channel Thermocouple Types	J, K, T, E, R, S, B, N		
Thermocouple Connection	Female subminiature (SMP)		
Cold Junction Compensation	Automatic, based on internal channel		
Maximum Thermocouple Resistance	1000 Ω, <100 Ω recommended		
Thermocouple	**Range (°C)**	**Resolution**	**Accuracy***
J	-210 to +760	0.1 °C	±0.5 °C
K	-270 to +1370	0.1 °C	±0.5 °C
T	-270 to +400	0.1 °C	±0.5 °C
E	-270 to +980	0.1 °C	±0.5 °C
R	-50 to +1760	0.5 °C	±2.0 °C
S	-50 to +1760	0.5 °C	±2.0 °C
B	+50 to +1820	0.5 °C	±2.0 °C
N	-270 to +1300	0.1 °C	±0.5 °C

*Thermocouple accuracy is specified with 24 AWG diameter thermocouple wires.

GENERAL	
Memory (All channels enabled)	**4-channel:** 524,032 readings per channel **8-channel:** 262,016 readings per channel
Start Modes	Software programmable immediate start or delay start, up to 6 months in advance
Real Time Recording	May be used with PC to monitor and record data in real time
LEDs	1 per channel and 2 status LEDs
Reading Rate	4 Hz up to 1 reading every 24 hours
Calibration	Digital calibration through software
Calibration Date	Automatically recorded within device
Battery Type	9 V lithium battery included, user replaceable
Battery Life	18 months typical with display off. 3 months typical with continuous display use.
Data Format	Date and time stamped °C, °F, K, °R, mV, V
Time Accuracy	±1 minute/month
Computer Interface	USB-A to micro USB cable (included); 460,800 baud
Operating System Compatibility	Windows XP SP3/7/8/10
Software Compatibility	Standard Software version 4.2.21 or later Secure Software version 4.2.18 or later
Operating Environment	-20 °C to +60 °C (-4 °F to +140 °F), 0 %RH to 95 %RH non-condensing
Dimensions	**4-channel:** 2.70 in x 7.25 in x 1.22 in (65.6 mm x 184.2 mm x 31.0 mm) **8-channel:** 2.70 in x 7.25 in x 1.68 in (65.6 mm x 184.2 mm x 42.7 mm)
Weight	**4-channel:** 15 oz (435 g) **8-channel:** 20 oz (569 g)
Enclosure	Black anodized aluminum
Approvals	CE

Battery Warning

BATTERY MAY LEAK, FLAME OR EXPLODE IF DISASSEMBLED, SHORTED, CHARGED, CONNECTED TOGETHER, MIXED WITH USED OR OTHER BATTERIES, EXPOSED TO FIRE OR HIGH TEMPERATURE. DISCARD USED BATTERY PROMPTLY. KEEP OUT OF REACH OF CHILDREN.

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If the unit malfunctions, it must be returned to the factory for evaluation. OMEGA's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective, it will be repaired or replaced at no charge. OMEGA's WARRANTY does not apply to defects resulting from any action of the purchaser, including but not limited to mishandling, improper interfacing, operation outside of design limits, improper repair, or unauthorized modification. This WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of having been damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components in which wear is not warranted, include but are not limited to contact points, fuses, and triacs.

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The purchaser is responsible for shipping charges, freight, insurance and proper packaging to prevent breakage in transit.

FOR **WARRANTY** RETURNS, please have the following information available BEFORE contacting OMEGA:

1. Purchase Order number under which the product was PURCHASED,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

FOR **NON-WARRANTY** REPAIRS, consult OMEGA for current repair charges. Have the following information available BEFORE contacting OMEGA:

1. Purchase Order number to cover the COST of the repair,
2. Model and serial number of the product, and
3. Repair instructions and/or specific problems relative to the product.

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