



OM-CP-BRIDGE101A-SERIES

Bridge / Strain Gauge Data Logger

INSTRUCTION
SHEET

MQS5776/0117



Product Notes

The OM-CP-BRIDGE101A Data Logger measures and records voltage, typically used in conjunction with strain gauges, load cells or other low-level DC voltage sources. This device is designed to accurately measure and record the output of the gauge to determine parameter levels such as stress, torque, strain, and pressure on a structure of item over a period of time.

Available in three different measurement ranges (± 30 mV, ± 160 mV, or ± 1200 mV), the OM-CP-BRIDGE101A offers a reading rate of up to 4Hz with memory capacity of 1,000,000 readings (memory wrap optional). The device can be configured to start at a specified date and time up to 24 months in advance and a push button start/stop feature allows the user to initiate or cease logging data in the field if desired.

***Omega recommends using 350 Ω or 1000 Ω strain gauges. 120 Ω strain gauges can be used with the OM-CP-BRIDGE101A but is not recommended as it will reduce the battery life, potentially increase noise level and limit the low end temperature operation.*

LEDs

- Green LED: every 10 seconds to indicate logging and 15 seconds to indicate delayed start mode.
- Red LED: every 10 seconds to indicate low battery and/or memory and 1 seconds to indicate an alarm condition.

Installation Guide

Installing the Interface cable

- OM-CP-IFC200

Insert the device into a USB port. The drivers will install automatically.

Installing the software

Insert the Omega Software Flash Drive in an open USB port. 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

Connecting and Starting the data logger

1. Once the software is installed and running, plug the interface cable into the data logger.
2. Connect the USB end of the interface cable into an open USB port on the computer.
3. The device will appear in the Connected Devices list, highlight the desired data logger.
4. 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.)
5. The status of the device will change to "**Running**", "**Waiting to Start**" or "**Waiting to Manual Start**", depending upon your start method.
6. Disconnect the data logger from the docking station and place it in the environment to measure.
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.

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 Maintenance

Battery Replacement

Materials: Small Phillips Head Screwdriver and a Replacement Battery (OM-CP-BAT105)

1. Puncture the center of the back label with the screw driver and unscrew the enclosure.
2. Remove the battery by pulling it perpendicular to the circuit board.
3. Insert the new battery into the terminals and verify it is secure.
4. Screw the enclosure back together securely.

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

Recalibration

OM-CP-BRIDGE101A standard calibration values:

| | | | |
|----------------|-----------------------|----------------------|------------------------|
| Logger Voltage | 30 mV | 150 mV | 1000 mV |
| Strain (V) | 0 V and 22.5-25 mV | 0 V and 90-100 mV | 0 V and 900-1000 mV |

Recalibration is recommended annually for any Omega data logger; a reminder is automatically displayed in the software when the device is due.

OM-CP-BRIDGE101A General Specifications

| Description | OM-CP-BRIDGE101A |
|----------------------------|---|
| Range | |
| Resolution | See Table Below* |
| Accuracy | |
| Memory | 1,000,000 readings; software configuration memory wrap 330,000 readings in multiple start/stop |
| Reading Rate | 4Hz to 1 every 24 hours |
| Units | V, mV, μ V, Engineering Units specified through software |
| Required Interface Package | OM-CP-IFC200 |
| Baud Rate | 115,200 |
| Typical Battery Life | 10 months typical at a 1 minute reading rate with a 350 Ω load 2 years typical at a 1 minute reading rate with a 1000 Ω load |
| Operating Environment | -40°C to +80°C (-40°F to 176°F), 0%RH to 90%RH (non-condensing) |
| Material | ABS plastic |
| Dimensions | 1.4" x 2.5" x 0.6" (36mm x 64mm x 16mm) |
| Weight | 0.8oz (24g) |

*OM-CP-BRIDGE101A Range, Resolution and Accuracy

| | | | |
|-------------------|-----------------|-----------------|-----------------|
| Nominal Range | \pm 30 mV | \pm 150 mV | \pm 1000 mV |
| Measurement Range | \pm 30 mV | \pm 160 mV | \pm 1200 mV |
| Resolution | 1 μ V | 5 μ V | 50 μ V |
| Accuracy | \pm 0.01 %FSR | \pm 0.01 %FSR | \pm 0.01 %FSR |
| Input Range | 0 to 2.5 V | 0 to 2.5 V | 0 to 2.5 V |
| Reference Voltage | 2.5 V | 2.5 V | 2.5 V |

Battery Warning

WARNING: FIRE, EXPLOSION, AND SEVERE BURN HAZARD. DO NOT SHORT CIRCUIT, CHARGE, FORCE OVER DISCHARGE, DISASSEMBLE, CRUSH, PENETRATE OR INCINERATE. BATTERY MAY LEAK OR EXPLODE IF HEATED ABOVE 80 °C (176 °F).

Specifications subject to change. See Omega's terms and conditions at www.omega.com

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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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