

Where Do I Find Everything I Need for Process Measurement and Control? OMEGA...Of Course!



User's Guide

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OMEGAnet™ On-Line Service
<http://www.omega.com>

Internet e-mail
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Servicing North America:

USA: ISO 9001 Certified
One Omega Drive, Box 4047
Stamford, CT 06907-0047
Tel: (203) 359-1660
FAX: (203) 359-7700
e-mail: info@omega.com

Canada:
976 Bergar
Laval (Quebec) H7L 5A1
Tel: (514) 856-6928
FAX: (514) 856-6886
e-mail: canada@omega.com

For immediate technical or application assistance:

USA and Canada:
Sales Service: 1-800-826-6342 / 1-800-TC-OMEGA™
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Tel: (95) 800-TC-OMEGA™
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En Español: (203) 359-7803
e-mail: espanol@omega.com



<http://www.omega.com>
e-mail: info@omega.com

Servicing Europe:

Benelux:
Postbus 8034, 1180 LA Amstelveen,
The Netherlands
Tel: (31) 20 6418405 FAX: (31) 20 6434643
Toll Free in Benelux: 06 0993344
e-mail: nl@omega.com

Germany/Austria:
Daimlerstrasse 26, D-75392
Deckenpfronn, Germany
Tel: 49 (07056) 3017 FAX: 49 (07056) 8540
Toll Free in Germany: 0130 11 21 66
e-mail: germany@omega.com

Czech Republic:
ul. Rude armady 1868, 733 01 Karvina-Hranice,
Czech Republic
Tel: 420 (69) 6311627 FAX: 420 (69) 6311114
e-mail: czech@omega.com

United Kingdom: ISO 9002 Certified
• 25 Swannington Road, Broughton
Astley, Leicestershire, LE9 6TU,
England
Tel: 44 (1455) 285520
FAX: 44 (1455) 283912
• P.O. Box 7, Omega Drive, Irlam,
Manchester, M44 5EX, England
Tel: 44 (161) 777-6611
FAX: 44 (161) 777-6622

France:
9, rue Denis Papin, 78190 Trappes
Tel: (33) 130-621-400 FAX: (33) 130-699-120
Toll Free in France: 0800-4-06342
e-mail: france@omega.com

Toll Free in England: 0800-488-488
e-mail: uk@omega.com

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WARNING: These products are not designed for use in, and should not be used for, patient connected applications.



CL250 Hand-Held Frequency Calibrator



WARRANTY / DISCLAIMER

OMEGA ENGINEERING, INC. warrants this unit to be free of defects in materials and workmanship for a period of **13 months** from date of purchase. OMEGA Warranty adds an additional one (1) month grace period to the normal **one (1) year product warranty** to cover handling and shipping time. This ensures that OMEGA's customers receive maximum coverage on each product.

If the unit should malfunction, 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 being 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 which wear are not warranted, including but not limited to contact points, fuses, and traces.

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CONDITIONS: Equipment sold by OMEGA is not intended to be used, nor shall it be used: (1) as a "Basic Component" under 10 CFR 21 (NRC), used in or with any nuclear installation or activity; or (2) in medical applications or used on humans. Should any Product(s) be used in or with any nuclear installation or activity, medical application, used on humans, or misused in any way, OMEGA assumes no responsibility as set forth in our basic WARRANTY/DISCLAIMER language, and additionally, purchaser will indemnify OMEGA and hold OMEGA harmless from any liability or damage whatsoever arising out of the use of the Product(s) in such a manner.

RETURN REQUESTS / INQUIRIES

Direct all warranty and repair requests/inquiries to the OMEGA Customer Service Department. BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA'S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS). The assigned AR number should then be marked on the outside of the return package and on any correspondence.

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

OMEGA's policy is to make running changes, not model changes, whenever an improvement is possible. This affords our customers the latest in technology and engineering. OMEGA is a registered trademark of OMEGA ENGINEERING, INC.

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- ✓ Air Velocity Indicators
- ✓ Turbine/Paddlewheel Systems
- ✓ Totalizers & Batch Controllers

M3121/0798

GENERAL DESCRIPTION

The CL250 Frequency calibrator is designed to be a high accuracy, simple to use frequency standard for calibrating process control instrumentation. The CL250 can generate or read frequencies ranging from 1 count per minute to 100 KHz allowing it to be used for a wide range of flow measuring instrumentation.

When operated in the source mode the user can quickly step the output in 10% of range increments or make smaller changes using the scroll keys.

INSTALLATION

UNPACKING

Remove the Packing List and verify that all equipment has been received. If there are any questions about the shipment, please call Omega's Customer Service Dept. at 1-800-826-6342.

When you receive the shipment, inspect the container and equipment for any signs of damage. Note any evidence of rough handling in transit. Immediately report any damage to the shipping agent.

NOTE

The carrier will not honor any claims unless all shipping material is saved for their examination. After examining and removing contents, save packing material and carton in the event reshipment is necessary.

SET-UP

Before beginning, become familiar with the keypad layout and the configuration of the input/output

jacks. Remember, these jacks are used in multiple configurations so pay careful attention to the jack identification label on back of unit and how the test leads are connected for the specific application.

OPERATING PROCEDURE

1. Turn on power and select the desired range by depressing the range select key. Your range choices are CPM, Hz, and KHz.
2. Make connections as required, refer to the operating modes section or the rear jack identification label for connection information.
3. The step and scroll keys adjust the output value up or down. Holding the scroll key continuously for several seconds will increase the scroll rate. The step key allows the user to make larger changes quickly and is preset to step in 10% of range increments.

OPERATING MODES

1. When operating in the output mode the CL250 has the capability to drive loads up to 1 Kohm with TTL levels. The standard output amplitude is a 5 volt \pm 10% p-p square wave.

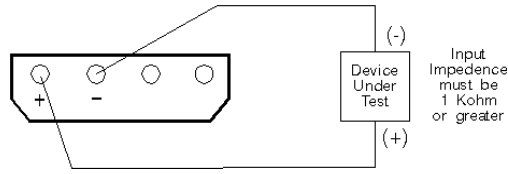


Figure 1

2. When operating in the read (input) mode the CL250 can monitor frequencies with amplitudes ranging from 1 to 100 volts. The waveform shape can be square, sine or triangular.

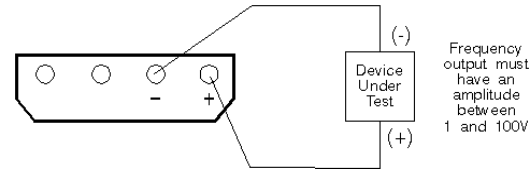


Figure 2

ACCURACY

The CL250 is checked against an NIST Traceable reference before shipment to verify that each range falls within the 0.01% \pm 1 count of full scale. Since the accuracy of this particular product is based on a very stable quartz crystal, the CL250 should stay well within its operating specification without the need for calibration for periods of 1 year or more.

SPECIFICATIONS

Input/Output Ranges	0 to 1000 CPM 0 to 1000 Hz 0 to 100.0 KHz
Accuracy	\pm 0.01% \pm 1 Count
Max Load Driving	5 mA (1 Kohm load min)
Input Signal Amplitude	1 to 100 Volts
Output Waveform	5V \pm 10%, Square wave
Operating Temp.	0 to 50°C
Storage Temp.	-20 to 60°C
Temp. Stability	.005% F.S./°C
Power ¹	9V alkaline battery
Weight	12 oz.

Notes: ¹ A low battery indication is given at 5.5 volts.

MAINTENANCE

Generally, with normal usage, this calibrator should hold its rated specifications for at least 12 months. If after the stated warranty period, the device falls out of calibration, it can be returned to Omega for re-calibration. Please call 1-800-826-6342 for pricing and return information.