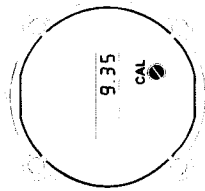


Instruction Manual

CDH-721 / CDH-722
TDS-721 / TDS-722

On-line, Waterproof
Conductivity-TDS
meters with Alarm



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These instruments are in
Compliance with the CE Directives

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It is the policy of OMEGA to comply with all worldwide safety and EMC/EMI regulations that apply. OMEGA is constantly pursuing certification of its products to the European New Approach Directives. OMEGA will add the CE mark to every appropriate device upon certification. The information contained in this document is believed to be correct, but OMEGA Engineering, Inc. accepts no liability for any errors it contains, and reserves the right to alter specifications without notice. **WARNING:** These products are not designed for use in, and should not be used for, patient-connected applications.

Dear Customer,

Thank you for choosing an Omega Engineering product. This manual will provide you with the necessary information for the correct operation of the meter. Please read it carefully before using the meter.

These instruments are in compliance with the CE directives EN 50081-1 and EN 50082-1.

PRELIMINARY EXAMINATION

Remove the instrument from the packing material and examine it carefully. If any damage has occurred during shipment, immediately notify Omega Customer Service. The meters are supplied with:

- CDH-721 & TDS-721: CDE-721 probe
- CDH-722 & TDS-722: CDE-722 probe
- Calibration screwdriver
- 12 VDC power adapter

Note: Conserve all packing material until the instrument has been observed to function correctly. Any defective item must be returned in its original packing.

GENERAL DESCRIPTION

These instruments are specially designed to meet the needs of simple continuous monitoring of conductivity or TDS.

The housing has been completely sealed against vapors and humidity with IP54 rating.

You can simply hang the meter right above the sample to be tested for continuous measurement.

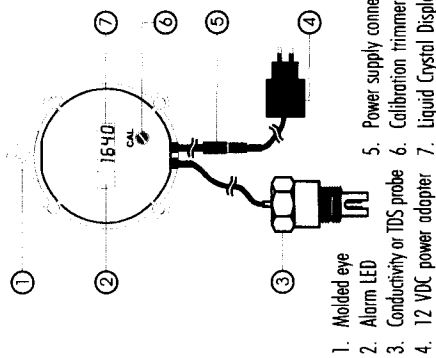
All the meters come with a probe that compensates for the temperature variation automatically. The probe is easy to clean and requires little maintenance.

You can even select your own setpoint and be alerted of an abnormal situation with a flashing LED alarm.

Measurements are highly accurate and the meters can be calibrated at one point.

You no longer need to worry about battery changes either: the unit runs without interruption on 12 VDC power supply.

FUNCTIONAL DESCRIPTION



1. Molded eye
2. Alarm LED
3. Conductivity or TDS probe
4. 12 VDC power adapter
5. Power supply connector
6. Calibration trimmer
7. Liquid Crystal Display

SPECIFICATIONS

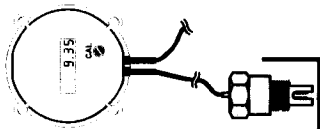
CDH-721	
Range	0 to 1990 $\mu\text{S}/\text{cm}$ (EC)
Resolution	10 $\mu\text{S}/\text{cm}$ (EC)
Setpoint	200 to 1600 $\mu\text{S}/\text{cm}$ (EC)
Hysteresis	± 100 $\mu\text{S}/\text{cm}$ (EC) over setpoint
Alarm	LED blinks when EC value is 100 $\mu\text{S}/\text{cm}$ higher than setpoint
Probe	CDE-721 conductivity/TDS probe (included)
TDS-721	
Range	0 to 1990 ppm
Resolution	10 ppm
TDS Factor	0.5
Setpoint	200 to 1600 ppm
Hysteresis	± 100 ppm around setpoint
Alarm	LED blinks when TDS value is outside hysteresis range
Probe	CDE-721 conductivity/TDS probe (included)

CDH-722	
Range	0.00 to 9.99 mS/cm
Resolution	0.01 mS/cm
Setpoint	0.70 to 3.50 mS/cm
Hysteresis	± 0.20 mS/cm around setpoint
Alarm	LED blinks when EC value is outside hysteresis range
Probe	CDE-722 conductivity/TDS probe (included)
TDS-722	
Range	0.00 to 9.99 ppt
Resolution	0.01 ppt
TDS Factor	0.5
Setpoint	0.70 to 3.50 ppt
Hysteresis	± 0.20 around setpoint
Alarm	LED blinks when EC value is outside hysteresis range
Probe	CDE-722 conductivity/TDS probe (included)
COMMON SPECIFICATIONS	
Accuracy (@ 25°C/77°F)	$\pm 2\%$ f.s.
Typical EMC Deviation	$\pm 2\%$ f.s.
Temperature Compensation	Automatic from 5 to 50°C (41 to 122°F)
Calibration	Manual with one trimmer
Casing	IP54
Power Supply	External 12 VDC (included)
Dimensions	86 x 94 x 33 mm (3.4 x 3.7 x 1.3")
Weight	150 g (5.3 oz.)

OPERATIONAL GUIDE

TAKING MEASUREMENTS

- Turn the meter on by connecting the 12 VDC power adapter to the meter and to the mains.

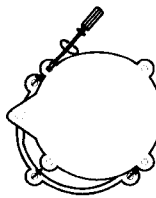


- Immerse the conductivity/TDS probe in the solution, making sure that the metal pins are completely submerged.
- The LCD will show the conductivity or TDS value. Any initial variation may be due to temperature compensation and the fact that the probe is adjusting itself to the new sample. Allow the reading to stabilize and the meter will start continuous monitoring.

ADJUSTING THE SETPOINT

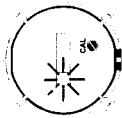
With the conductivity and TDS meters you can select your own setpoint and be alerted with a visual LED alarm when an abnormal situation arises.

- Unscrew and remove the rear panel and gasket seal to access the MEASURE/SET switch.



- Move the switch to the left (SET Mode).
- With a small screwdriver adjust the setpoint trimmer to display the desired value in the setpoint range specified for you model.
- Make sure the switch is moved back to the right (MEASURE Mode).
- Replace the rear panel and the gasket, ensuring the unit is properly closed.

- Whenever the conductivity or TDS reading varies by more than the hysteresis specified for your model from the setpoint, the red alarm LED will blink.



PROBE MAINTENANCE

To minimize clogging and provide longer life for the probe, it's recommended to clean it often or at least once a month.

- Immerse the tip of the electrode in cleaning solution for one hour.
- If a more thorough cleaning is required, brush the metal pins with very fine sandpaper.
- After cleaning or when not in use, rinse the probe with tap water.

CALIBRATION

For the greatest accuracy, frequent calibration of the instrument is recommended.

- Turn the meter on and make sure that the MEASURE/SET switch is on the MEASURE mode.
- Pour a small quantity of calibration solution* in a beaker. If possible, use plastic beakers to minimize any EMC interference.
- 1413µS/cm for CDH-721; 1382 ppm for TDS-721; 5.00 mS/cm for CDH-722; 6.44 ppt for TDS-722.
- Immerse the conductivity/TDS probe in the solution, making sure that metal pins are completely submerged.



Note: in order not to affect the accuracy of measurements, it is important that

- probe body does not touch nor stand close to the side walls of the beaker. The tip can lay on the bottom of the beaker.
- Wait for a couple of minutes for thermal equilibrium to be reached.
- Tap the probe gently on the bottom, then shake it while rotating to make sure no air bubbles have remained trapped.

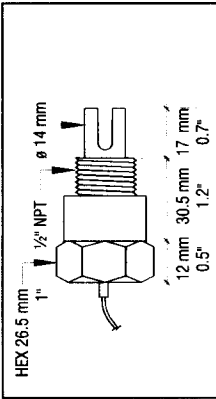
- Adjust the calibration trimmer with the supplied screwdriver until the display shows 1410.5/cm (CDH-721) or 1380ppm (TDS-721) or 5.00mS/cm (CDH-722) or 6.44ppt (TDS-722).

- The calibration is now complete and the instrument is ready for use.

The instrument should be recalibrated at least once a month and after performing probe cleaning procedure.



Probe Dimensions



WARRANTY

WARRANTY/DISCLAIMER

OMEGA ENGINEERING, INC. warrants this unit to be free of defects in materials and workmanship for a period of 12 months from date of purchase. OMEGA'S 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 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, this 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 mislabeling, improper metering, operation outside of design limits, improper repair, or unauthorized modification. This WARRANTY is VOID if the one 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, installation; misuse or other operating conditions outside of OMEGA'S limits. Components which wear are not warranted, including but not limited to contact points, fuses, and fuses.

OMEGA is pleased to offer suggestions on the use of its various products. However, OMEGA neither assumes responsibility for any omissions or errors nor assumes liability for any damages that result from the use of its products in accordance with information provided by OMEGA, either verbal or written. OMEGA warrants only that parts manufactured by it will be as specified and free of defects. OMEGA MAKES NO OTHER WARRANTIES OR REPRESENTATIONS OF ANY KIND WHATSOEVER, EXPRESS OR IMPLIED, EXCEPT THAT OF TITLE, AND ALL IMPLIED WARRANTIES INCLUDING ANY WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED. LIMITATION OF LIABILITY: The remedies of purchaser set forth herein are exclusive, and the total liability of OMEGA with respect to this order, whether based on contract, warranty, negligence, indemnification, strict liability or otherwise, shall not exceed the purchase price of the component upon which liability is based. In no event shall OMEGA be liable for consequential, incidental or special damages.

CONDITIONS: Equipment sold by OMEGA is not intended to be used, nor shall it be used: (1) as a "Back 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 best 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, height, insurance and proper packaging to prevent breakage in transit.

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

- Purchase Order number under which the product was PURCHASED;
- Model and serial number of the product under warranty, and
- 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:

- Purchase Order number to cover the cost of the repair;
- Model and serial number of the product; and
- Repair instructions and/or specific problems relative to the product.

OMEGA'S policy is to make running changes, not made changes, whenever an improvement is possible. This affords our customers the latest in technology and engineering.

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