

**1 YEAR**  
WARRANTY

# **Ω OMEGA®** **User's Guide**



*Shop online at*  
***omega.com<sup>SM</sup>***

*e-mail: [info@omega.com](mailto:info@omega.com)*  
*For latest product manuals:*  
***[www.omegamanual.info](http://www.omegamanual.info)***

## **ACC141 SERIES**



omega.com info@omega.com

**Servicing North America:**

**U.S.A.  
Headquarters:**

Omega Engineering, Inc.

Toll-Free: 1-800-826-6342 (USA & Canada only)

Customer Service: 1-800-622-2378 (USA & Canada only)

Engineering Service: 1-800-872-9436 (USA & Canada only)

Tel: (203) 359-1660

Fax: (203) 359-7700

e-mail: info@omega.com

**For Other Locations Visit [omega.com/worldwide](http://omega.com/worldwide)**

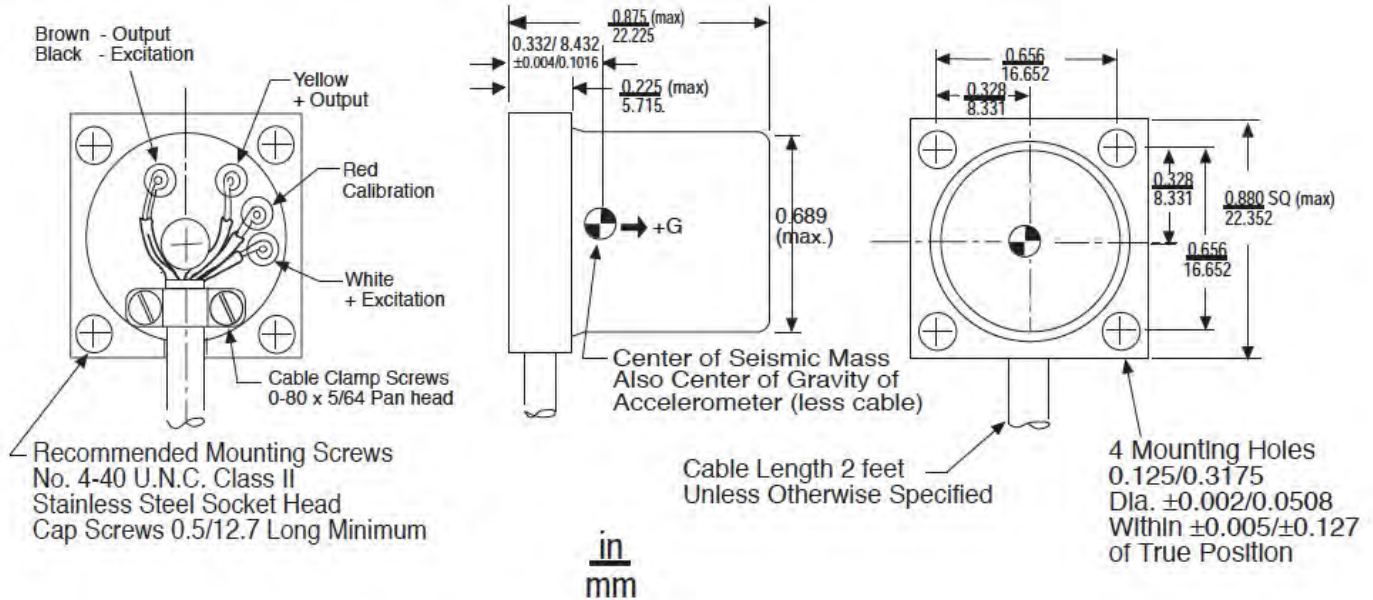
# OPERATING INSTRUCTIONS ACC141 SERIES ACCELEROMETER

## GENERAL INFORMATION

Your Omega accelerometer has been carefully calibrated before shipment to you, and it should be handled with the same care given any precision instrument. Omega accelerometers are rugged devices, built to take considerable overrange of "G" loads.

Please refer to the ACC141 calibration data before proceeding further.

ELECTRICAL CONNECTIONS	
Cable Lead	Function
White	positive excitation
Black	negative excitation
Yellow	positive output
Brown	negative output
Red	calibration signal
Shield	case



**CAUTION:** Be absolutely sure of excitation power polarity before applying power, reserved excitation will burn out the circuit instantly.

### **ACC141A MUST NOT BE OPERATED WITH EXCITATION EXCEEDING 15 VDC.**

ACC141A accelerometer excitation voltage 5 VDC to 15 VDC. Keep excitation power between 5 VDC min. and 15 VDC maximum. High voltage may burn out the circuit. Installation of a protective Zener diode such as a IN4746A across the excitation power input leads is a good practice, taking care to orient the diode correctly. This Zener diode protects the transducer circuit against high voltage transients and against inadvertent application of excess voltages or reversed voltage. Note that the Zener diode normally conducts up to 200 milliamperes satisfactorily but that excessive current drain will cause the Zener diode to short-circuit internally, hopefully protecting the transducer from damage. Should this happen, the Zener diode must of course be replaced before further use of the transducer.

### **ACC141B MUST NOT BE OPERATED WITH EXCITATION VOLTAGE EXCEEDING 28 VDC.**

ACC141B accelerometer excitation power 10 VDC minimum and 28 VDC maximum. High voltage may burn out the circuit. Installation of a protective Zener diode such as IN4752 across the excitation power input leads is a good practice, taking care to orient the diode correctly. This Zener diode protects the transducer circuit against high voltage transients and against inadvertent application of excess voltages or reversed voltage. Note that the Zener diode normally conducts up to 30 milliamperes satisfactorily but that excessive current drain will cause the Zener diode to short-circuit internally, hopefully protecting the transducer from damage. Should this happen, the Zener diode must of course be replaced before further use of the transducer.

### **CALIBRATION SIGNAL**

Select an external  $R_{CAL}$  and shunt the red lead through  $R_{CAL}$  to the brown lead (-signal output). An  $R_{CAL}$  value is shown on the calibration certificate. Less conductive resistors produce a nearly proportional decrease in calibration signal. Higher conductivity resistors produce a similarly proportional increase in calibration signal.

### **THE CALIBRATED OUTPUT OF YOUR ACCELEROMETER**

Your accelerometer was factory-calibrated on a centrifuge at a precise excitation voltage reported on the calibration certificate. The accelerometer output voltage was measured into open circuit (10 megohms). The output impedance of the ACC141 accelerometer is 9K ohms (nominal). Loading effect on the output does not appreciably change the linearity or thermal behavior of the transducer. The output into heavy loads may be calculated by assuming simple voltage divider action. The sensitivity is approximately proportional to the excitation voltage.

## **RETURNING PRODUCTS FOR REPAIR**

Please contact Omega at 1-800-826-6342 or 1-203-359-1660 before returning unit for repair to review information relative to your application. Many times, only minor field adjustments may be necessary. When returning a product to Omega, the material should be carefully packaged and shipped prepaid to:

Omega Engineering, Inc  
One Omega Drive  
P.O. Box 4047  
Stamford, CT 06907-0047

To assure prompt handling, please supply the following information and include it inside the package of returned material:

1. Name and phone number of person to contact.
2. Shipping and billing instruction.
3. Full description of the malfunction.
4. Identify any hazardous material used with product.

*Notes: Please remove any pressure fittings and plumbing that you have installed and enclose any required mating electrical connectors and wiring diagrams. Allow approximately 3 weeks after receipt at Omega for the repair and return of the unit. Non-warranty repairs will not be made without customer approval and a purchase order to cover the repair charges.*

### **Calibration Services**

Omega maintains a complete calibration facility that is traceable to the National Institute of Standards & Technology (NIST). If you would like to recalibrate or re-certify your Omega pressure transducers or transmitters, please call our Sales Department at 1-800-826-6342 or 1-203-359-1660 for scheduling, cost and turnaround estimates.

Thank you,  
Omega Engineering, Inc.

## 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'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, 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.

**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 the parts manufactured by the company will be as specified and free of defects. OMEGA MAKES NO OTHER WARRANTIES OR REPRESENTATIONS OF ANY KIND WHATSOEVER, EXPRESSED 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 "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. 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.

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.

© Copyright 2017 OMEGA ENGINEERING, INC. All rights reserved. This document may not be copied, photocopied, reproduced, translated, or reduced to any electronic medium or machine-readable form, in whole or in part, without the prior written consent of OMEGA ENGINEERING, INC.

# Where Do I Find Everything I Need for Process Measurement and Control? **OMEGA...Of Course!** *Shop online at [omega.com](http://omega.com)<sup>SM</sup>*

## **TEMPERATURE**

- ☑ Thermocouple, RTD & Thermistor Probes, Connectors, Panels & Assemblies
- ☑ Wire: Thermocouple, RTD & Thermistor
- ☑ Calibrators & Ice Point References
- ☑ Recorders, Controllers & Process Monitors
- ☑ Infrared Pyrometers

## **PRESSURE, STRAIN AND FORCE**

- ☑ Transducers & Strain Gages
- ☑ Load Cells & Pressure Gages
- ☑ Displacement Transducers
- ☑ Instrumentation & Accessories

## **FLOW/LEVEL**

- ☑ Rotameters, Gas Mass Flowmeters & Flow Computers
- ☑ Air Velocity Indicators
- ☑ Turbine/Paddlewheel Systems
- ☑ Totalizers & Batch Controllers

## **pH/CONDUCTIVITY**

- ☑ pH Electrodes, Testers & Accessories
- ☑ Benchtop/Laboratory Meters
- ☑ Controllers, Calibrators, Simulators & Pumps
- ☑ Industrial pH & Conductivity Equipment

## **DATA ACQUISITION**

- ☑ Communications-Based Acquisition Systems
- ☑ Data Logging Systems
- ☑ Wireless Sensors, Transmitters, & Receivers
- ☑ Signal Conditioners
- ☑ Data Acquisition Software

## **HEATERS**

- ☑ Heating Cable
- ☑ Cartridge & Strip Heaters
- ☑ Immersion & Band Heaters
- ☑ Flexible Heaters
- ☑ Laboratory Heaters

## **ENVIRONMENTAL MONITORING AND CONTROL**

- ☑ Metering & Control Instrumentation
- ☑ Refractometers
- ☑ Pumps & Tubing
- ☑ Air, Soil & Water Monitors
- ☑ Industrial Water & Wastewater Treatment
- ☑ pH, Conductivity & Dissolved Oxygen Instruments