

# Acuity

Laser Measurement

*Interlock Kit  
For Acuity distance sensors  
with Class 3B lasers*

## User's Manual



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Acuity  
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# 1. Background

Some Acuity™ laser sensors are configured with Class 3B laser diodes that require conformance to additional safety procedures. This document discusses those additional safety precautions as specified by [ANSI Z136.1 Standards for the Safe Use of Lasers](#). Additionally, Acuity makes available a special Connectivity Kit with a keyswitch interlock as well as a remote emission indicator. Purchasers of Acuity sensors with Class 3B who plan to further integrate these devices into engineered systems should design their systems to meet these safety requirements.

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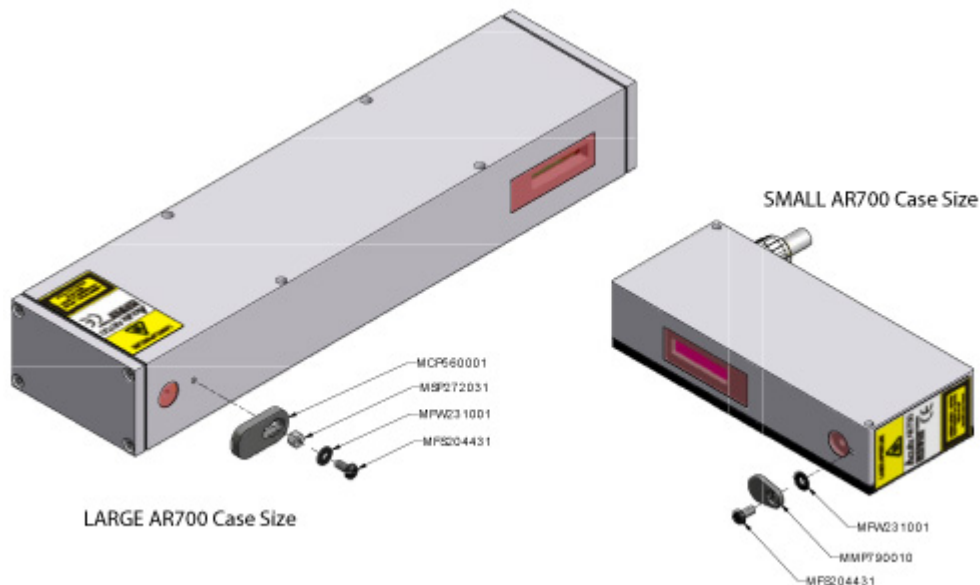
# 2. Compliance with Safety Precautions

**CAUTION!** - This laser device should not be aimed at the human eye. Installers of laser sensors should follow precautions set forth by ANSI Z136.1 [Standard for the Safe Use of Lasers](#) or by their local safety oversight organization. Be sure that the laser will not cause an eye hazard.

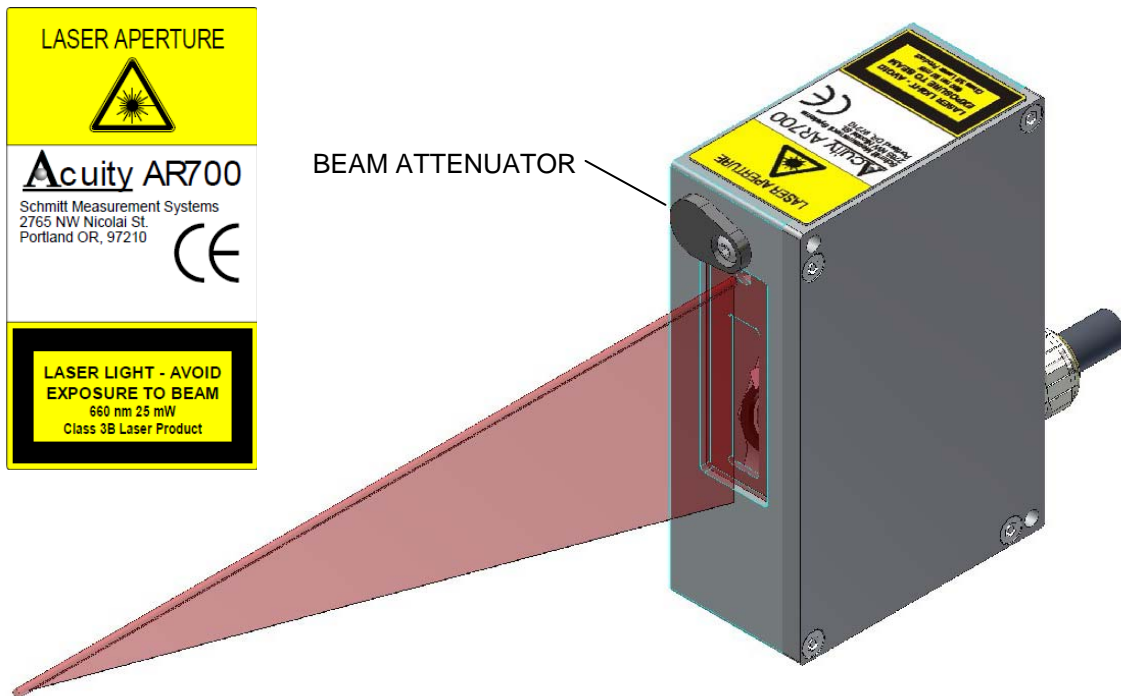
For Class 3B models, use eyewear specifically designed to block laser light of the wavelength emitted by the sensor. Use eyewear through which the green "LASER ON" LEDs are visible.

The AR700 Class 3B sensor requires the addition of safety features before it may be used. The AQ7000011 (US power plug) or AQ700012 (EU power plug) Interface Kits with Interlocks provide these features. The AR700 sensor must be wired correctly to the Interlock Kit and have the beam attenuator installed in order to comply with laser safety regulations.

- Beam Attenuator. The Beam Attenuator should be installed on the sensor if it is not already installed. The beam attenuator kits are included with the Interlock Kits. Follow the instructions depicted in the picture below.



Rotate the beam attenuator to block the laser aperture as required in your system. Note that the sensor will not operate correctly with the beam blocked.



- Key Switch. Power is applied to the sensor only when the key is in the ON position. Laser emission is only possible when the key is ON.

- Interlock Connect. Power is applied to the sensor only when the connection exists between the terminals of this connector. Laser emission is only possible when the interlock circuit is connected. Connect this plug to any required external safety switches such that the connection is broken for an unsafe condition.

- Remote Emission Indicator. This will illuminate whenever power is applied to the sensor, indicating that laser emission is possible at any time.

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### 3. Connecting the Interlock Kit

Read the AR700 user's manual for operation information on the sensor unit.

1. Remove the cover of the interlock box and loosen the strain relief and route the sensor's cable through it.
2. Connect each of the cable's wires to the terminal block on the 'SENSOR CABLE' side, matching each wire color with the corresponding label. Note that the shield's color is 'clear'.
3. Tighten the strain relief on the cable jacket.
4. (Optional) Connect any desired interface circuits to the terminal block on the other end of the Interlock Box. These include analog outputs, limits, RS232,

RS422, and trigger or enable inputs. See the AR700 manual for details on these signals.

5. Replace the cover.
6. Insert the Interlock plug into the interlock connector.
7. Plug the power supply into the +15VDC connector. Optionally, +15VDC power can be supplied via the other end of the Interlock Box using terminal block connections labeled 'GROUND' and '+15V'.
8. (Optional) Connect a host computer to the 'Serial' connector. See the AR700 manual for details. The serial connector Interlock Box is wired in accordance with the connections shown in chapter 4 of the user's manual.
9. Insert the key and turn the key switch ON.

