AE422U Laser anti-collision device (switch signal)  

**Application**  
Specially designed for the hoisting machinery (travelling crane, bright crane, rail crane, gantry crane, etc).

**Major functions and features**  
- Voice Prompt Pre-alarm and Alarm, Pre-alarm and Alarm point is adjustable.  
- Mini display panel displays distance.  
- Suit for use 2 sets 4~20mA signal anti-collision sensors, it is flexible to set measure distance.  
- Both direction two levels NO or NC switch signal output.  
- Can be connected two sensors, 4-20mA input  
- Wide range of voltage: AC85~ AC265V

**AE421C Specification:**

<table>
<thead>
<tr>
<th>Supply voltage</th>
<th>AC85V ~ AC265V</th>
<th>Frequency</th>
<th>50-60Hz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sound level</td>
<td>0dB~80dB</td>
<td>Wattage</td>
<td>&lt;10W</td>
</tr>
<tr>
<td>Range</td>
<td>0.2m ~ 50m</td>
<td>Display resolution</td>
<td>0.1m</td>
</tr>
<tr>
<td>Tolerance</td>
<td>±0.1 m</td>
<td>Application</td>
<td>Indoor</td>
</tr>
<tr>
<td>Action-time</td>
<td>0.5s</td>
<td>Voice Prompt alarm, digit communication (optional) Both direction two levels switch signal output. (NO or NC)</td>
<td></td>
</tr>
<tr>
<td>Resistance</td>
<td>12A 125VAC</td>
<td>7A 250VAC</td>
<td>7A 30VDC</td>
</tr>
<tr>
<td>Display</td>
<td>Content: distance Refreshing frequency : 2 frequency per second</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temperature</td>
<td>-30˚C ~ +70˚C</td>
<td>Humidity</td>
<td>0% ~ 95% (no coagulation)</td>
</tr>
<tr>
<td>Material</td>
<td>ABS</td>
<td>Weight</td>
<td>0.5Kg</td>
</tr>
</tbody>
</table>

**AE421A Specification:**

<table>
<thead>
<tr>
<th>Detect distance</th>
<th>200mm...50m (with reflector)</th>
<th>Spot diameter</th>
<th>15mm x 15mm(2m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage</td>
<td>DC12-30V</td>
<td>Signal</td>
<td>4-20mA</td>
</tr>
<tr>
<td>Output current</td>
<td>I_{max} = 100mA</td>
<td>Laser protection level</td>
<td>Level 1 (EN 60825-1)</td>
</tr>
<tr>
<td>Inversion frequency</td>
<td>333...6Hz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temperature</td>
<td>-15˚C ~ +55˚C</td>
<td>IP rating</td>
<td>IP65</td>
</tr>
<tr>
<td>Material</td>
<td>Cold rolled sheet + Galvanized + Power coated</td>
<td>Weight</td>
<td>0.48Kg</td>
</tr>
</tbody>
</table>
**AE422U Laser anti-collision device (switch signal)  AE422U-E1-V11**

**AE422C dimension (unit: mm)**

- AE422C Parameter setting:
  - Fig.1 Pre-alarm point setting
  - Fig.2 Alarm point setting
  - Fig.3 Measurement range setting

**Application:**

- **AE421C display installation:**
  A. Make sure power supply match with rated voltage.
  B. Parallel mounting surface to displayer.
  C. Use 4 pcs M5 screws to fix displayer, mounting surface should have enough machinery strength.
  D. Unfasten screws and remove the plate.
  E. Connect the power wire, data wire and control wire through the gland, connect the power wire and signal wire in accord with terminal label.
  F. Check well then power on
  G. Fasten useless terminals to aviod short circuit

**AE421C display:**

- **★, AE421C display can be connected with two sensors, when display received current signal less than 3.5mA or more than 20mA, it displays “----” output 20.5mA in the same time, means non sensor connect or detect distance is over standard; when display receive 3.5mA current signal, it displays 0m, output 3.5mA in the same time, means detect distance is less than 0.2m.**
- **★, It displays left distance data when only connect left sensor.**
- **★, It displays right distance data when only connect right sensor.**
- **★, When connect both left and right sensors, it displays data of moving direction when equipment is moving; it displays near side data when equipment stop**
- **★, When sensor detect actual distance data is less than pre-alarm or alarm point, display will broadcast speech alarm. In normal condition, long press ▲ or ▼ button to adjust volume.**
- **★, When sensor detect actual distance data is less than pre-alarm or alarm point, display will broadcast speech alarm, and record data into SD memory card.**
- **★, Display has current output module, suit for PLC system.**
- **★, Display has RS485 interface, RS485 continous output 1 frequency per second when connect sensor.**
AE421C operation and debugging:

1. Left and Right distance display debugging:
   1) Connect left sensor only for debugging left system, if display ----, it means bad contact of sensor, please check whether cable connect well or the display gets damaged.
   2) Connect right sensor only for debugging right system, if display ----, it means bad contact of sensor, please check whether cable connect well or the display gets damaged.
   3) Please connect left and right sensor after debugging

2. Mode and parameter setting:
   A is cipher of timing system setting mode: cipher is A16.3.
   b is pre-alarm point setting, i.e. display “b04.0”, it means pre-alarm point is 4m. (Fig.1)
   C is alarm point setting, i.e. display “C02.0”, it means alarm point is 2m. (Fig.2)
   d is measurement range setting, i.e. display “d50.0”, it means measurement range is 0~50m. (Fig.3)
   If sensor range is 4~20ma corresponding 0~20m, please set C as “d20.0”.
   If sensor range is 4~20ma corresponding 0~50m, please set C as “d50.0”. (others are the same)

(1) Configuration (Note: after entering to the setting mode, If without any motion in the button after configure 10s will auto back to the normal display mode)

   A mode: constant press SET button for 3s until display A00.0, “A” word flash.
   b mode: after into A mode or C mode, constant press ▼ or short press ▲ until display bXX.X, “b” word flash.
   C mode: after into A mode or b mode, constant press ▼ or short press ▲ until display CXX.X then off, “C” word flash.
   d mode: after into A mode or b mode, constant press ▼ or short press ▲ until display dXX.X then off, “d” word flash.

(2) Parameter setting

   At first should enter the setting mode, short press ▼ until the cursor to position you want revise, then short press ▼ or short press ▲ to revise the corresponding data (the corresponding data will change repeating), after revised well then press SET button 3 seconds to confirm.

Note: In normal condition, press ▼ and ▲ button 3 seconds in the same time to recovery factory setting.

• Ex-Work Parameter Setting

<table>
<thead>
<tr>
<th>No.</th>
<th>Parameter</th>
<th>Figure</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Measurement range</td>
<td>0.2m~50m</td>
</tr>
<tr>
<td>2</td>
<td>Pre-alarm point</td>
<td>4m</td>
</tr>
<tr>
<td>3</td>
<td>Alarm point</td>
<td>2m</td>
</tr>
</tbody>
</table>
AE421C wiring diagram

Notice
- Controller AE421C is indoor application.
- Ensure power supply is corresponding to AE421C rated voltage.
- Please connect wires follow wiring diagram, avoid short circuit.
- Temperature rise inside the control box is normal phenomenon
- Keep reflector and sensor lens clear, dirty items or frost will impact product stability, serious case products failure, suggest clear them every 6 months.
- Please do not open any components inside by yourself
- Please contact us if you have any questions.