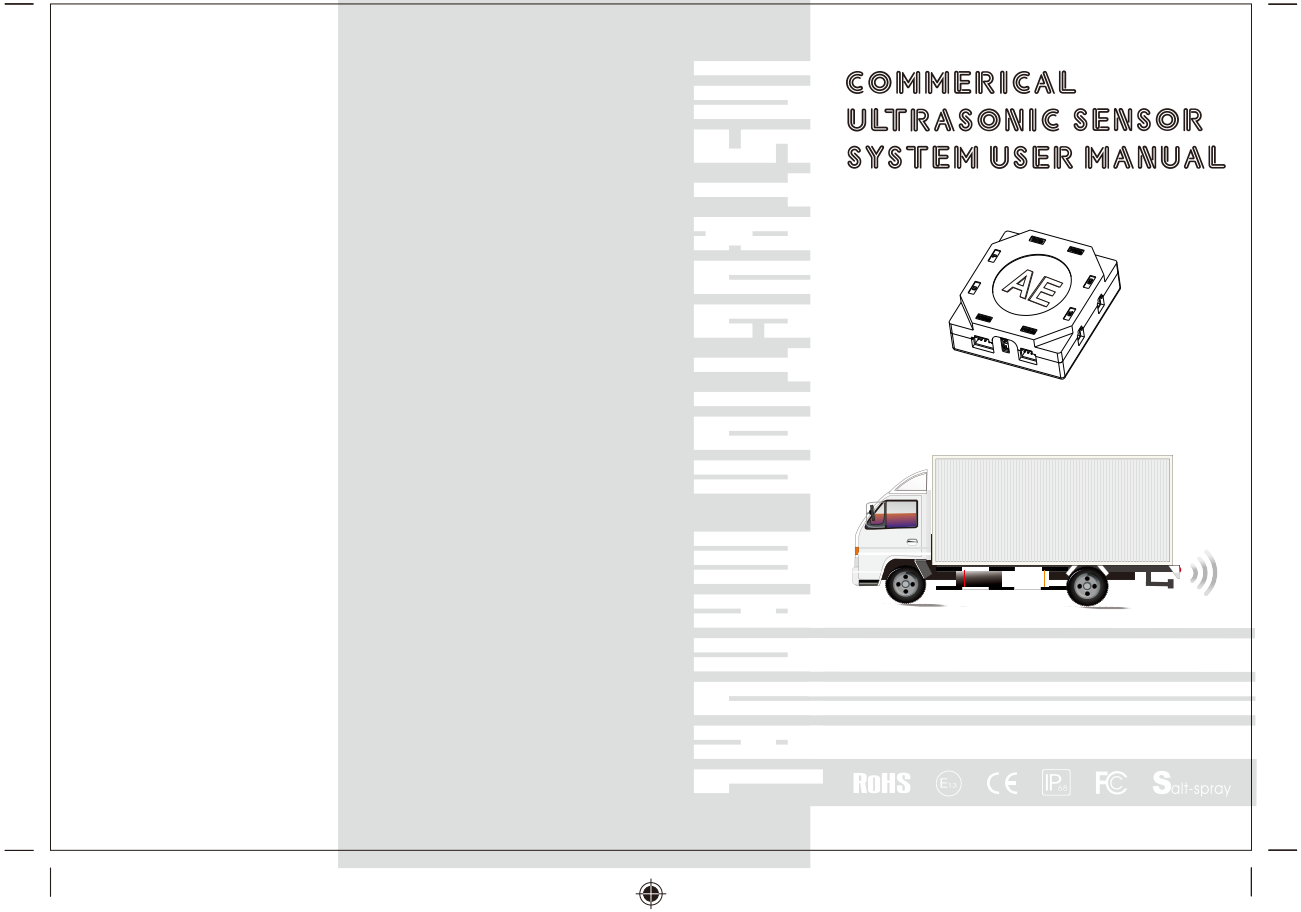
尺寸\公差数	A	B	C
0-8	±0.05	±0.1	±0.15
8-25	±0.08	±0.15	±0.2
25-80	±0.12	±0.2	±0.3
80-250	±0.2	±0.3	±0.4

版本	处数	修改内容	日期
V1.5		更改连接图及规格参数	2023.02.27



注：

1、折后尺寸:105X148MM(展开尺寸:210X148mm)

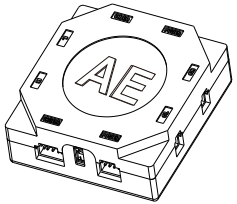
2、印刷颜色:依照内文为准,需文字清晰

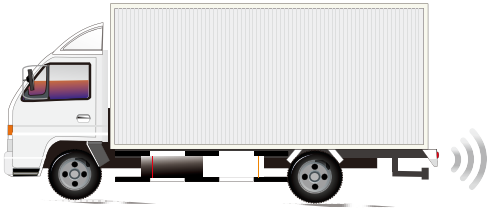
3、标准材质:80g书写纸,双面印刷.

4、标准页码:说明书共10页,成册,双面印刷,统一左侧打钉,封底留白!

惠州宇弘科技有限公司						图纸规格 A4
制作	叶秀清 2023.02.27	机种型号	CB126-A	材质		数量:	比例:
审核	汪祥辉	物料名称	英文说明书（中性）			版本:V1.5	单位:MM
核准		物料编码	640-126000-001			共 1 页	第 1 页

COMMERICAL ULTRASONIC SENSOR SYSTEM USER MANUAL





RoHS E13 CE IP68 FC Salt-spray

TABLE OF CONTENTS

This device complies with part 18 of the FCC Rules.
This equipment has been tested and found to comply with Part 18 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

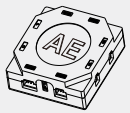
CAUTION : Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the product.

NOTE : This equipment generates , uses and can radiate radio frequency energy and , if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.However,there is no guarantee that interference will not occur in a particular installation . If this equipment does cause harmful interference to radio or television reception , which can be determined by turning the equipment off and on , the user is encouraged to try to correct the interference by one or more of the following measures: Reorient or relocate the receiving antenna . Increase the separation between the equipment and receiver. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected. Consult the dealer or an experienced radio/ TV technician for help."

FEATURE

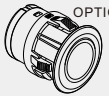
The intelligent ultrasonic sensor is designed for commercial vehicle such as vans, motorhomes and heavy goods vehicle. The system provides active warning with visual and audible beeping alerts, alert you of detecting object as far as 2.4M. There are 4° / 8° / 12° sleeves can be chosen, allow lower mounting while still providing a high quality performance.

SYSTEM COMPONENTS



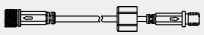
CONTROL BOX X1

OPTION ONE

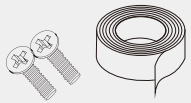


DRILL-HOLE SENSOR X4

*Drill-hole version only (including sleeves)

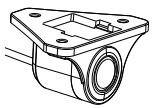


SENSOR CABLE X4



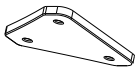
SCREW&WATERPROOF TAPE

OPTION TWO



SUSPENDED SENSOR X4

*Suspended version only



RUBBER PAD X4

*Suspended version only

Confirm the version of sensor which you need,drill-hole or suspended version. There are two different sensor components as above.

Optional Components:

ALARM*1 BUZZER*1

BUZZER EXTENSION CABLE*1

SLEEVE (4° / 8° / 12°, 4 EACH) OR SUSPENDED BRACKET (INCLUDING RUBBER PAD)*4

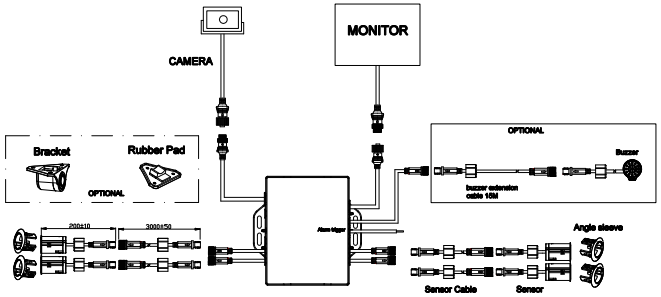
Remark: After checking that you have received all the above items, connect the system with peripheral equipment following the instruction below!

CONNECTION OF THE WHOLE SYSTEM

The red wire is connected to positive 12/24V power input.

The black wire is connected to ground .

The green wire is connected to switched power output terminal of the reverse gear. When the green wire is triggered, the ultrasonic sensor system will start to work.



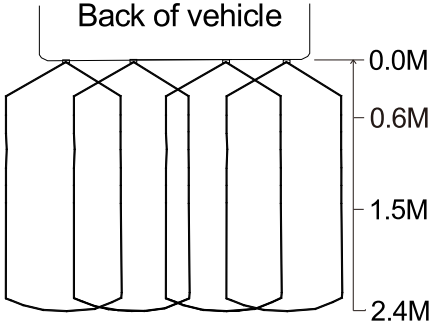
CAUTION

⚠ Before making the connection, disconnect the ground terminal of the car battery to avoid short circuits.

⚠ The plugs should be fully inserted into the connectors or jacks.A loose connection may cause malfunction of the unit.

FUNCTIONS

Detection



* Detection pattern for reference only

Distance	Alarming Sound
0 – 0.6m	Constant sound
0.6m – 1.5m	1/4 SEC intermittent beep
1.5m – 2.4m	1 SEC intermittent beep

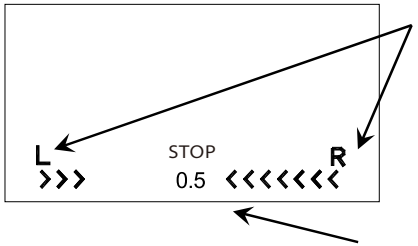
Sensor Diagnosis

Once power on, the system starts its self-diagnosis.

Symptom	Diagnosis
1 short beep	1 faulty sensor
2 short beeps	2 faulty sensors
3 short beeps	3 faulty sensors
4 short beeps	4 faulty sensors

Distance Indicator

When sensor detects any object, related information will be displayed on monitor.



Number Of "Arrow"	Distance
7	0 – 0.6m
5	0.7m – 1.5m
3	1.6m – 2.4m

Environment Learning Mode

Control box can memorize certain objects, such as backup tires, and avoid them from being detected. To activate this mode, quickly turn control box on & off for four times, and all objects within detection coverage will be memorized and ignored. Please make sure there's no unwanted objects memorized.

Note: A. Please don't activate learning mode while vehicle is moving!
B. If object's distance / location to vehicle has changed, memorizing process needs to be carried out again to avoid undesired warning sound.

Switch Function

switch1: UP---L/CL/CR/R sensor detect range 2.4M.
switch1: DOWN---L/R sensor detect range 0.9M.
CL/CR sensor detect range 2.4M.
switch2: UP --- normal OSD display.
switch2: DOWN --- flipped OSD display
(camera image is not affected)

INSTALLATION

CAUTION

⚠ It is advised to read this manual before installation,which is recommended to be executed by trained and qualified person.

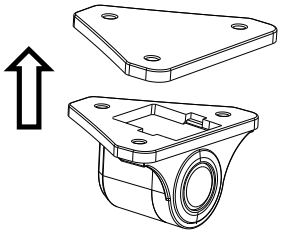
Choose And Mark Installation Locations

Choose a suitable location, measure the height to the ground and then mark the location.

Sensor Installation

Suspended sensor

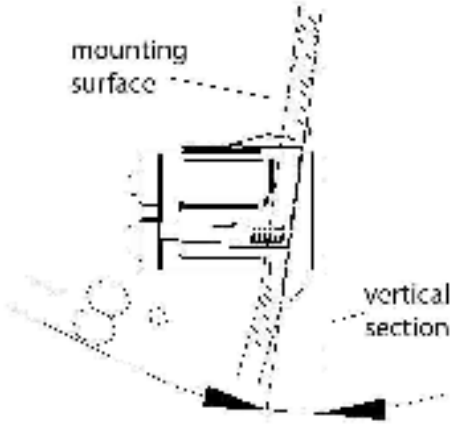
It's strongly advised to mount sensor at least 45cm from the ground (when vehicle is fully loaded). Insert sensor into mounting housing, put rubber pad in place and use screws to fix the sensors onto vehicle.



Drill-hole-type sensor

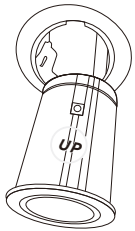
Measure the angle of installation location.Check below table and use sensor sleeves in installation kit to adjust the sensor to optimized angle.

Mounting Height	Optimized Sensor Angle
30cm	9˚~14˚
40cm	6˚~11˚
50cm	1˚~6˚
60cm	-4˚~1˚



There are three kinds of (4° /8° /12°) sleeves to choose from. For example, for a location with a 50cm mounting height and -8° angle against vertical section (as shoeed in below picture). Then the computing method is:

low limit angle (1°) ≤sensor sleeve angle+mounting position angle (−8°)≤high limit angle(6°)
So it is cleat that 12° sensor sleeve is needed to adjust sensor to the optimized angle.



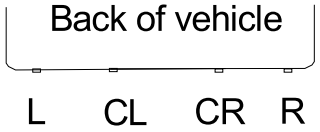
Drill 24mm hole, push sensor sleeve into the drill hole. There's a marking on sensor bracket, please make sure this marking faces upward. Then insert sensor into the sleeve.

Control Box Installation

Use the velcro on control box to stick it in a flat locat ion, make sure the sensor cables are long enough to reach the control module.

Cable Connection

Make sure sensors are connected to correct ports on control module, then connect control module with camera and monitor.



System Diagnosis

System will execute diagnosis every time it's power-on. Please refer to "**sensor diagnosis**" on page 3 for detailed information.

Buzzer (optional)

When buzzer is connected to system,it will indicate obstacle distance as below:
0-60cm:constant sound, LED light colour is red
60-150cm:fast beeping, LED light colour is yellow
150-240cm:slow beeping, LED light colour is green
Buzzer volume can be adjusted between Hi, Low and Off, by using the switch on buzzer.

DISCLAIMER

In below case, a object might not be detected.
(1) A small object, which is under your bumper or too close to the vehicle,may not be detected.
(2) When reversing down a steep slope or driveway,gravel and/or the road surface may cause momentary detection signal.
(3) Reversing on loose gravel,rough surface,and pot holes may produce intermittent detection.
(4) Reversing at an angle towards a partial wall or other large flat surface may refract ultrasonic signals.
(5) If reversing towards a 90° angle such as a corner of a wall or a pillar.
(6) Due to natural projection angle of the sensors, a nature"no coverage" area is common with the system at the outer corners of the vehicle,this may occur at about 0−10 "from the bumper's outer corners.

CAUTION:

This system only being used as an assistant tool for driving and parking vehicles , User should make judgments on his own discretion. We and our products take NO responsibility for traffic accidents caused by driving and parking.

SPECIFICATIONS

Category	Parameters
Operation Voltage	10V-32V DC
Rated Voltage	12V/24V DC
Current Consumption	<300mA
Operation Temperature	-20°C ----+70°C
Storage Temperature	-40°C ----+85°C
Ultrasonic Frequency	58KHz±2KHz
Tone Frequency	2300±200Hz
Detection Range	0-240CM
OSD TV System	AHD NTSC/PAL
Video Resolution	1080P