QUICK START GUIDE

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Motor Vehicle Safety Management System V2.10

Note：

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Motor vehicle safety management system

1. Features

- With LED display screen. Wireless sensor has the function of reverse voice prompt.
- Wireless speed measurement and wired speed measurement are compatible(choose either-or).
- With the design of wide voltage power supply, DC 11V～48V.
- Alarm can be controlled by remote controller within 1 meters
- 4-level volume adjustment. External powerful horn for alarm, warning sound up to 120dB.
- Two kinds of warning: Flash lamp and voice alarm.
- Three-level speed setting. Different levels of speed has different sound for warnings.
- Alarm locking time can be adjusted from 0 to 99 seconds. If the speed of forklift exceeds the set sp eed, will warn automatically.
- Waterproof capability is IP8, even able to work well in rain.
- Use wireless sensor, making installation simpler.
- Use metal sensor installation, compatible with the traditional speed measurement way.
- Adopt relay to control oil circuits, realizing over speed locking and speed limit control. Mechanical speed limit can be used together with mechanical throttle speed limiter.

2. Technical parameters

- Operating voltage: DC12V ~48V
- Power consumption: 5W
- Alarm load: ≤100mA/DC12V
- Alarm output loudness: 120dB
- Working temperature: -20～60℃
- Speed testing signal input parameter:

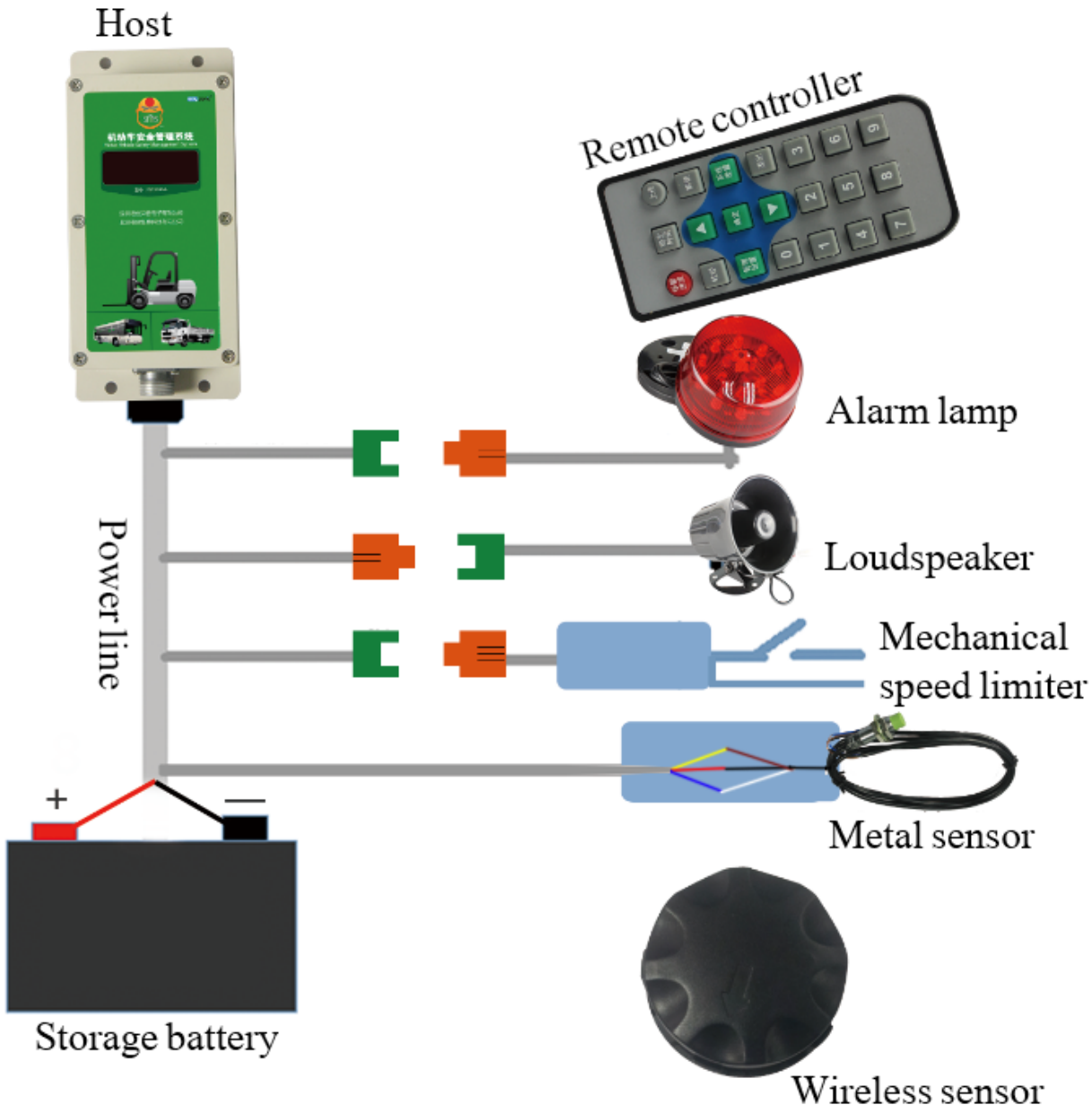
  24V≥high level≥5V, low level≤0.3V; drive current ≥15MA; frequency ≤10K;

  Min Pulse Width ≥100US(microsecond); effective signal: falling edge is effective.
- Wireless speed testing sensor:

  built-in 3V/500MA button cell, working temperature: 8℃～+40℃, storage temperature: -8℃～+35℃;

  Working time(for reference): up to more than 4 months if working over 24 hours everyday, more than 8 months if working for 8 hours everyday.(note: wired sensor has no this parameter.)

3. Quick start guide-wiring logic diagram



4. Installation guidance

1

Host installation

Use screw to fix the host on iron prop.

2

Alarm/loudspeaker installation

Directly use cable ties to fix alarm lamp and loudspeaker.

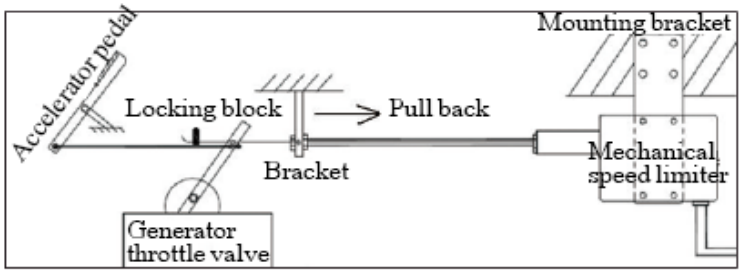
3

Sensor installation

Metal sensor is installed on pan box

4

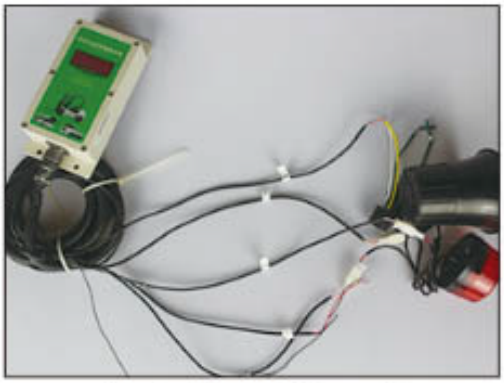
Speed limiter installation



5 Wiring

Tidy up the lines and use cable ties to tie them tightly along the hob.

6 Connecting wire



Please refer to the wiring diagram on page 3 for the details.

7 Debugging

After finishing installation, start forklift to debug.

5. Other reference of wire connection

5.1 Signal wire: the red is positive, the yellow is signal and the white is negative. Probe sensor wire: the brown is positive, the blue is negative, the black is signal(subject to the actual mark). If using wireless speed sensor, this wire is no need to be connected.

Relay connection diagram

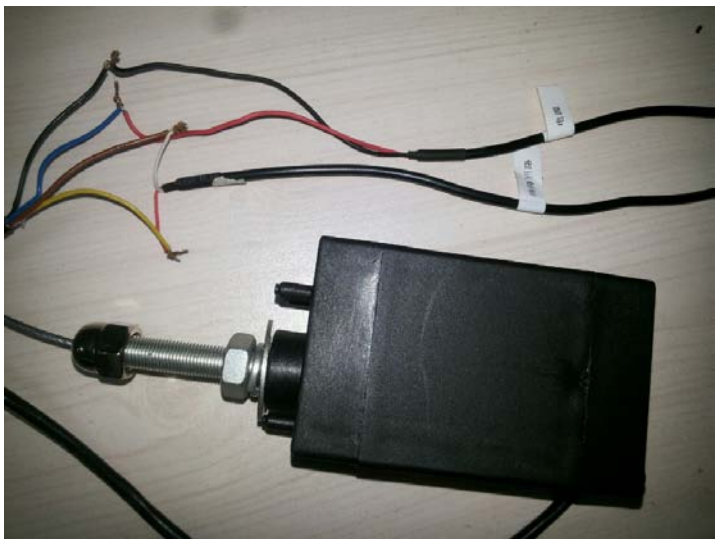
5.2 The connection of oil way circuit line

5.2.1 Relay connection(Normally closed): directly connect the circuit line to the coil of the relay base(yellow line and white line, only for reference). The two green lines of the base are the contact lines of normally-closed switch. When reaching the set conditions, the two green lines will be disconnected.

5.2.2 Mechanical throttle speed limiter

Power line: input DC12-24V/2A; blue(green) line is connected to the positive and black line is connected to the negative.

Control line: yellow line is connected to the host oil-way red control lines and brown(red) line is connected to the black line(white line).



Connection diagram of mechanical throttle speed limiter

6. Speed correction parameter Settings

6.1 Wired speed sensor—automatic learning

First, measure 10-meter distance in a straight line, select a reference point on the vehicle(such as front wheel axis etc.) and stop at 10-meter start location, then press “wheel diameter” into “speed correction parameter setting”. After displaying numbers, start vehicle walking (during this period, the host will read corresponding pulse numbers which will be changing all the way). When the selected reference point is up to 10 meters, the vehicle will immediately stop walking and the host will display the current studied pulse number. Press OK key, then the setting is successfully finished. It will automatically save the pulse numbers.

Note: whether it is accurate to input 10-meter pulse numbers determines the accuracy of the speed measurement. So the distance of 10 meters must be accurate, the car should cover the distance of10 meters in a straight line.

6.2 Wired speed sensor---manual input

When there is wired metal sensor and 10-meter pulse number has been studied on the same type vehicle, press “wheel diameter” into “speed correction parameter setting”, then press number key to input numbers from 0-9(unit: pulse number). After the input is correct, press "OK" button, that is, finishing the setting successfully. If clicking "quit", the settings will be canceled.

(Press”▲” and “▼” to clear the input)

6.3 Wireless speed sensor---wheel diameter input

When it is wireless sensor, manually input the diameter of the wheel outer ring by remote controller(unit: cm). After pressing “wheel diameter” into “speed correction parameter setting”, press the number keys to input numbers from 0~9 (unit: cm). After inputting correctly, click "OK", that is, finishing the setting successfully. If clicking "quit", the settings will be canceled.

(Press”▲” and “▼” to clear the input)

7. Locking Time Setting

Press “locking time” into time setting, then press the number keys to input numbers from 0~9(range is 0～99s). After finishing the input, click "OK", that is, finishing the setting successfully. If clicking "quit", the settings will be canceled. (Press”▲” and “▼” to clear the input)

Set warning speed

3 levels warning speed can be set, warning as follows:

One-level warning: alarm lamp flashes.

Two-level warning: alarm lamp flashes. Loudspeaker gives warning voice “ding-dong” continuously.

Three-level warning: alarm lamp flashes. Loudspeaker continuously gives warning voice “Overspeeding. Attention, please”.

Press “over speeding ” key and press”▲” and “▼” to select “one or two or three warning speed” menu. Click “OK” into the setting of warning speed level, then press the number keys to input numbers from 0~9(unit: KM/H). After finishing the input, click "OK", that is, finishing the setting successfully. If clicking "quit", the settings will be canceled. (Press”▲” and “▼” to clear the input)

8. System Setting

8.1 Volume Setting

Press “System Setting” key and press”▲” and “▼” to select “Volume Setting(VOL)” menu. Click “OK” into setting (with 4 levels selective volume: mute, 1 level, 2 level and 3 level). Press”▲” and “▼” once again to select warning volume. Then click "OK", that is, finishing the setting successfully. If clicking "quit", the settings will be canceled.

8.2 Voice Navigation

Press “System Setting” key and press”▲” and “▼” to select “Voice Navigation(VOG)” menu. Click “OK” into “Voice Navigation” setting. Press”▲” and “▼” once again to select “Open” or ”Close” voice navigation. Then click "OK", that is, finishing the setting successfully. If clicking "quit", the settings will be canceled.

8.3 Sensor Location

Press “System Setting” key and press”▲” and “▼” to select “ Sensor Location (SS-L)” menu. Click “OK” into “Sensor Location” setting. By pressing”▲” and “▼”, select the sensor location “Left” or ”Right”. Then click "OK", that is, finishing the setting successfully. If clicking "quit", the settings will be canceled.

Note: only wireless sensor has this function for reversing voice prompt.

8.4 Reversing voice switch

Press “System Setting” key and press”▲” and “▼” to select “ Reversing voice switch” menu. Click “OK” into “Reversing voice switch” setting. By pressing”▲” and “▼”, select ”Open” or ”Close”. Then click "OK", that is, finishing the setting successfully. If clicking "quit", the settings will be canceled.

6.3.5 Language setting

Press “System Setting” key and press”▲” and “▼” to select “ Language(LANG)” menu. Click “OK” into “Language” setting. By pressing”▲” and “▼”, select ”Chinese” or ”English”. Then click "OK", that is,

finishing the setting successfully. If clicking "quit", the settings will be canceled.

8.5 Factory Data Reset

Press “System Setting” key and press”▲” and “▼” to select “Factory Data Reset”. Click “OK” into “Factory Data Reset”. Then click "OK" to reset factory data and all parameters will be restored to factory settings . If clicking "quit", the settings will be canceled.

9. Management settings

9.1 Oil-way Control Function

Enter into the menu, through “▲” and “▼”to choose “Oil-way Control Function (POST)”. Then click "OK" into menu “Oil-way Control Function”.By pressing”▲” and “▼”, select ”Locking mode” or ”Limit mode”. Then click "OK", that is, finishing the settings successfully. If clicking "quit", the settings will be canceled.

Remark:

Limit mode: electronic or mechanical velocity limit is for option.

- **Electronic velocity limit:** after vehicle is over speed, oil-way control relay switches off. After vehicle speed is less than 3-level alarm speed, oil way control relay is closed.
- **Mechanical velocity limit:** after vehicle is over speed (running speed over 3-level speed and the distance over 1km), mechanical controller steel wire will shrink and not release until the running speed is less than 3-level speed. (such as applied in diesel vehicle and other motor vehicle.)

Locking mode: after vehicle is over speed and locked, oil way control relay is cut off. Oil way control relay will not close until administrator unlocking.

9.2 Oil Way Control Switch

Into “management settings”, press “▲” and “▼” to choose whether to open or close oil way control function, then press “OK” to insure. If press “quit”, it will cancel the settings.

Remark:

After closing oil-way control function, oil-way control relay will be closed all the time, that is, this function will be invalid.

10. The way to unlock the locking alarm

Under the state of the locking host alarm, use remote controller to press “unlock” button to unlock the locking alarm.

Matters needing attention

1. Installation notes

To make system normal installation and operation, pay attention to the following things:

◎ Wire connection should be based on the marking and instruction. Each line should be connected to the corresponding interface in case of wrong connections.

◎ Input power must be within the operating range in case that there is unstable power supply to cause problems.

◎ The connectors and unconnected wire leading terminals should be bandaged and fixed well.

◎ Wired sensor must be installed firmly, fully considering its shock resistance to prevent its swing from causing damage to the sensor.

◎ For the Wired sensor installation, should take notice of the effective sensing distance and swing range of detection point to prevent the long distance from causing problems such as no speed or speed-instability.
◎ The detection point of wired sensor should be installed in the neat and smooth place, rather than the rugged place to prevent its swing from the damage to the sensor.
◎ After the installation of wired sensor, fix the lead wire well to avoid its swing.
◎ When using wireless sensor, the sensor and the host or receiver should be installed within 2- meter visual range, but shall not be placed in the place where is bad signal, strong magnetic, strong radiation or metal shielding, resulting speed instability.
◎ All installations must be firm, fully considering its shock resistance to avoid damage caused by loosening.
◎ Controller, speakers, alarm lamp must be installed in the safe location, avoiding being hit by other objects, causing damage.
◎ Horn, alarm lights should be installed in the place where administrators easily see for warning prompt.
◎ For the external controller, should pay attention to whether the parameters are in line with the requirements, in order to prevent the device from damage or accident caused by overload.
◎ Wiring should be away from engine, exhaust pipe, motor, high-power relay switch, and other strong magnetic places with high temperature and strong radiation in case of damage or abnormal work.

2. Operation notes

◎Remote operation need to be within 1 meters.
◎Speed correction parameters must be correct and accurate, otherwise, speed measurement will be inaccurate.
◎The locking time and warning rate should be set according to the application environment (for example, locking time is 6; two-level speed is 8; three-level speed is 10).
◎Other functions must be very clear before setting, or the problems caused by the setup error results in unnecessary loss.

3. Usage notes

To carry out regular maintenance of the system, the specific measures are:
◎ Regularly check whether the line is damaged and its terminal is exposed, and timely deal with problems.
◎ The wired speed sensor should be cleaned regularly, cleaning sediment and adding lubricant oil etc. (especially preventing iron slag from being adsorbed on the tachometer wheel.)
◎ Check the wireless speed sensor whether its shell is good, to prevent damage caused by external force; pay attention to the battery working hours or battery indicator, and replace the battery timely.
◎ System surface should keep dry, preventing too much water for long time from causing damage to the wire. if water sinks into tachometer wheel and internal host, reasonable measurement should be taken to dry water (such as using hair dryer).
◎ In the using process, if there is system failure, it should be opened by the professionals; non professionals do not open.

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