



WB-SE100 EXPLOSION PROOF SMART CONSOLE

USER MANUAL

V2.0 AUGUST 2016

INTRODUCTION

Welcome to choose Automatic Tank Gauging (ATG) System of Windbell Company. All our products are under strict inspection and testing before left factory. And you are strongly recommended to read this manual before installation.

The installation and maintenance of the products must be done by the qualified technicians.

Please keep this user manual properly so that you can look up and get help in time.

Safety Instruction

- The product is installed in mobile fueling site, please read safety instructions for explosion protection.
- No power during installation and maintenance.
- The products are prohibited to be installed in explosion proof area over its own Ex-proof grade.

Unpack and Check

Please check all the materials according to the list. If anything missed, please contact the local representative or distributor directly. You can also find the contact information of Windbell in this manual.

Warranty Card

After installation, please send the filled Warranty card to Service Department of Windbell by email sales@windbelltek.com, it is for your benefits and timely service.

Thank you very much!

Copyright Notice

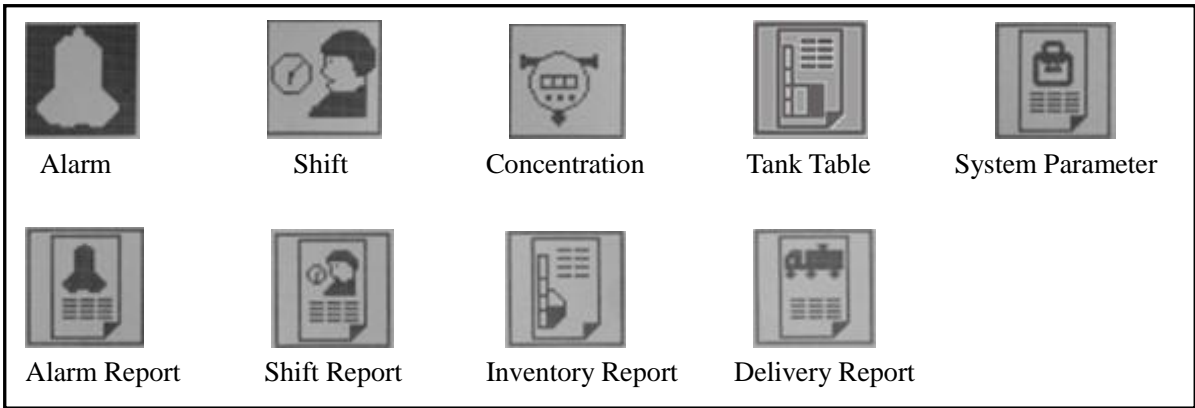
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In the constant effort to improve our product, we reserve the right to make construction or design changes without notice or obligation.

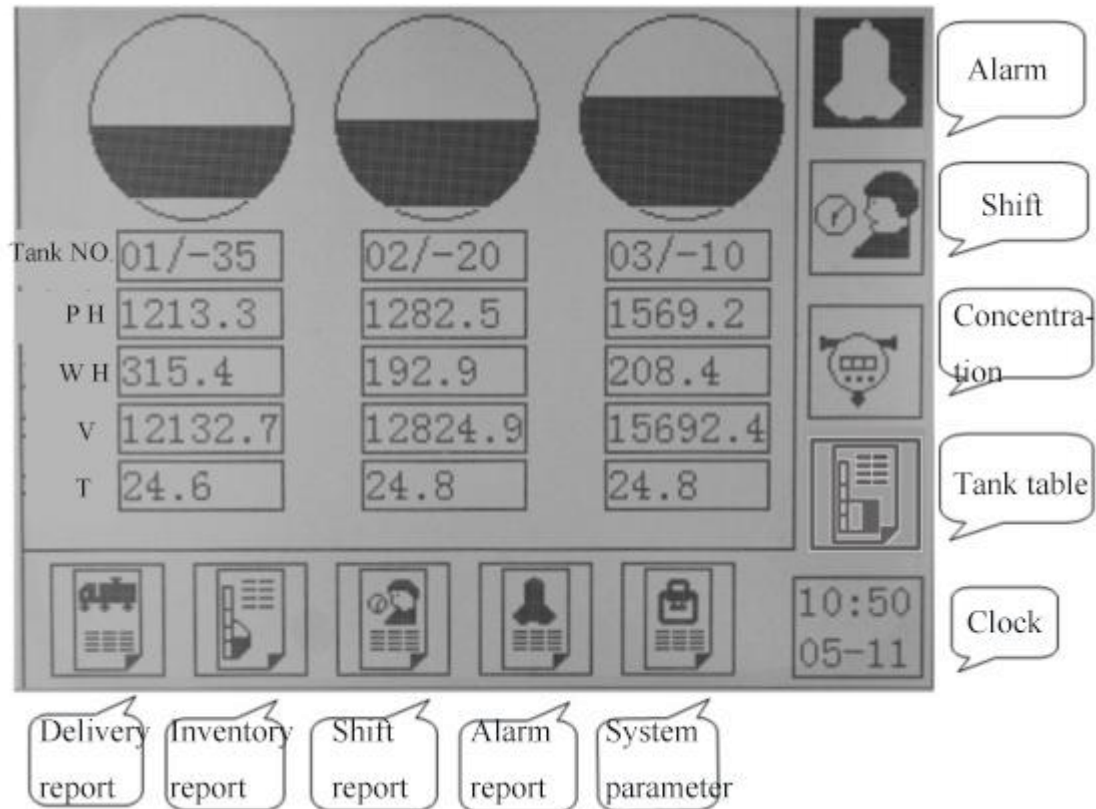
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Common Icon



Monitoring Interface(home page)



1. Summary

1.1. Smart Console

WB-SE100 Ex-proof console is especially designed to use at mobile petrol station or tank area. The console can be directly installed at tank area, no need other protection instruments. It optimize intelligent micro-controller technology, and combined with excellent electronic crafts; this console attracts more attention on its well-formed shape. And it is easy to operation even integrates more functions.

The console is mainly composed of display screen, core processing CPU, safety barriers and power module. The display screen is 320 * 240 black and white LCD screen, which is used for real time information display and related report parameter query. The CPU which composed of the advanced embedded processor and peripheral circuit is the control center of the whole tank gauge system. The safety barrier is intrinsic safe parts, offer safety power to probe. The power supply module provides safe and reliable power for the whole system.



WB-SE100 Ex-proof console

1.2. Features and Technical Parameters

System Features

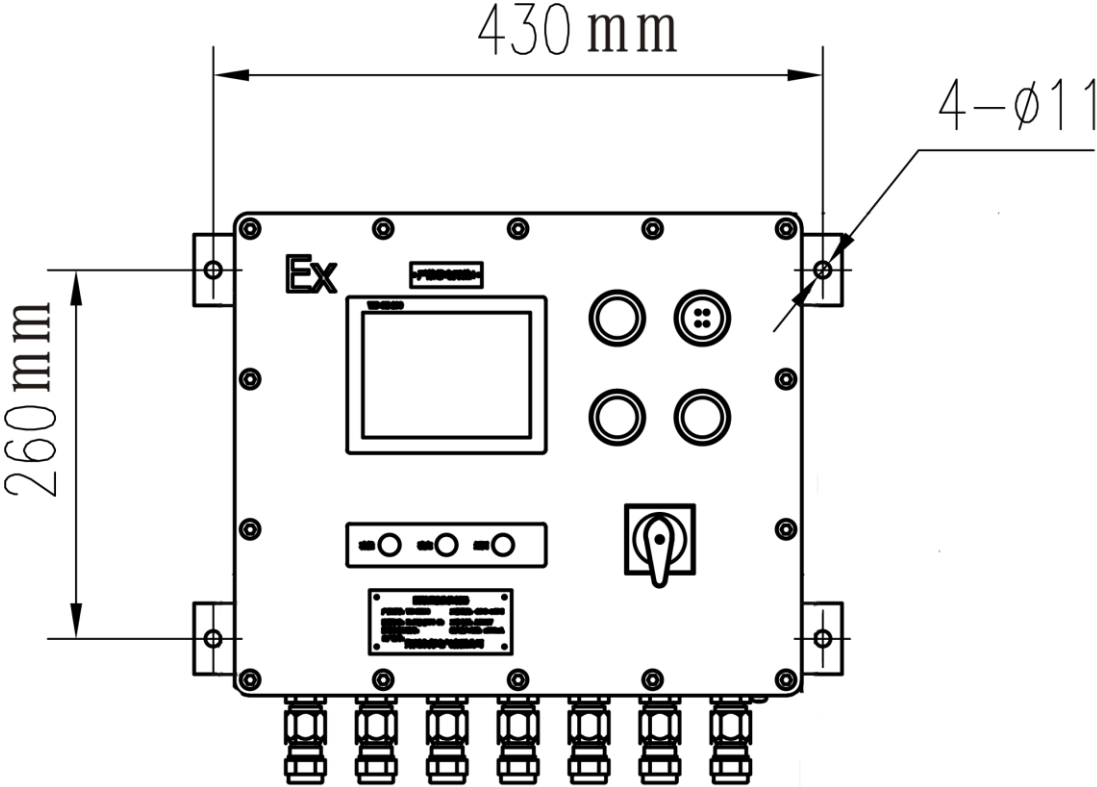
- 6 inches LCD graphical display, clearly and visualized.
- Monitor up to 3 tanks in real time, visual display oil product level, water level, volume and temperature.
- Automatically alarm with visible flashing, automatically release alarm, and can generate alarm report.
- Alarm of high oil level, low oil level, high temperature and high water level.
- Supports shift manually, can generate shift report and inventory report.
- Real time monitor delivery status, and can generate delivery report.
- Real time clock.
- Supports to monitor oil gas density nearby tank.
- Supports alarm of oil gas density.
- Standard configure 7 relay outputs.

Technical Parameters

Power	AC220V+/-10%, 50/60Hz
Working temperature	-20 to 30 Centigrade (-4 to 140F)
Resolution of screen	320 x240
Size of screen	6"
RS485 Port	1
RS232 Port	1
Monitor tanks	3
Output Relays	7 Groups, Capacity AC250V/10A, 30V/10A
Intrinsically safety barrier	WINDBELL GSB03
Explosion proof grade	Exd [ia] II AT4 Gb
Enclosure dimension	40cm×34cm×16cm (L×H×W)
Weight	30KGS

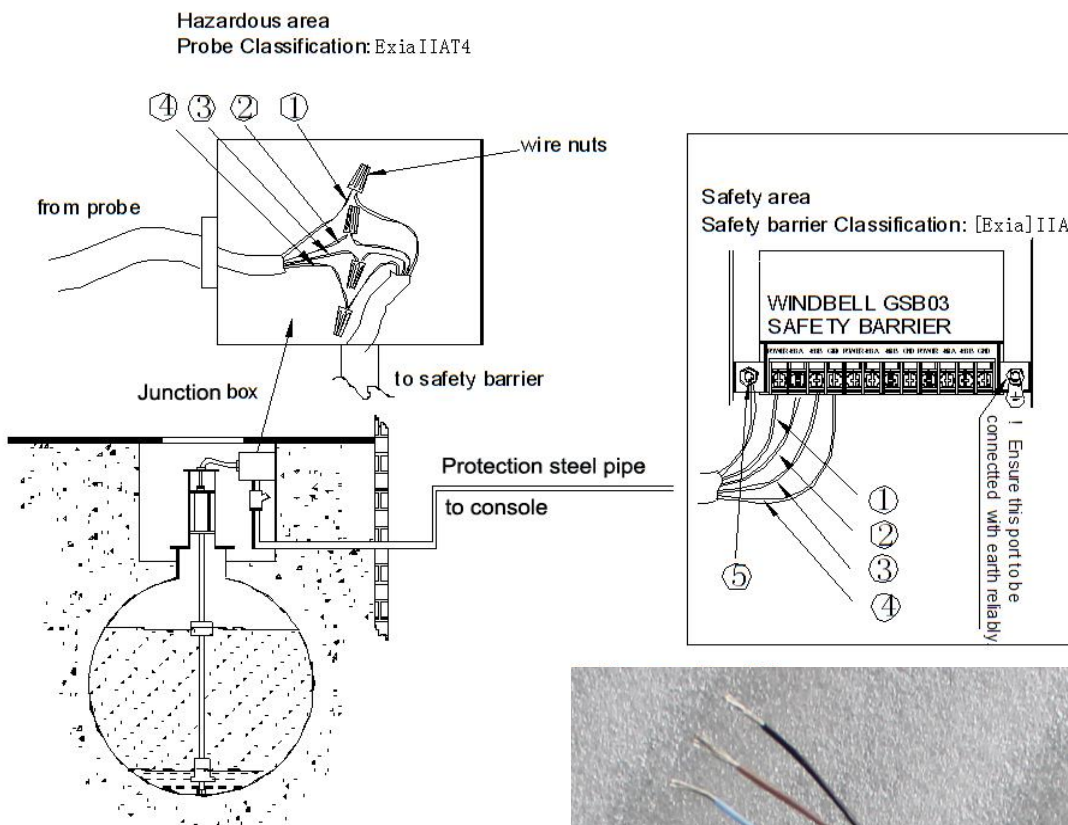
2. Installation

2.1. Installation of Smart Console



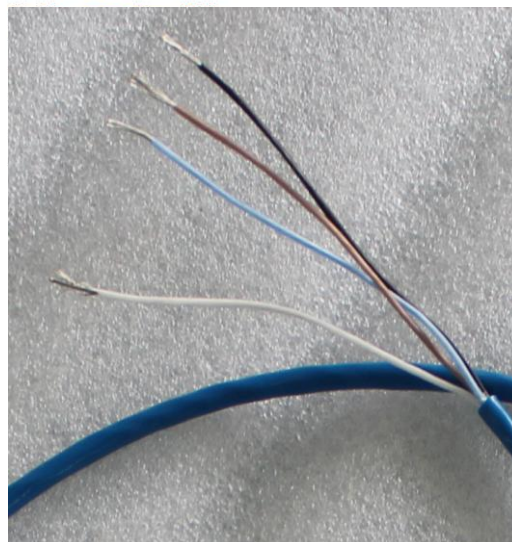
2.2. Electrical Wiring Diagram of ATG System

The cable from probe must be correctly connect to relevant safety barrier inside console. The shielding of cable must connect to PE of safety barrier. The safety barrier also must connect to grounding reliably. As fig. below:



Cable Connection Table

No.	Power wires	Port of safety barrier
①	Blue wire	Power (Power +)
②	Brown wire	485A
③	White wire	485B
④	Black wire	GND (Power-)
⑤	Shielded wire	



Safety Warning

- Grounding terminal of safety barrier should connect to ground reliably by more than 6 mm² multi-core copper cable.
- No power before right wiring.
- ATG system must share the same grounding with tank.

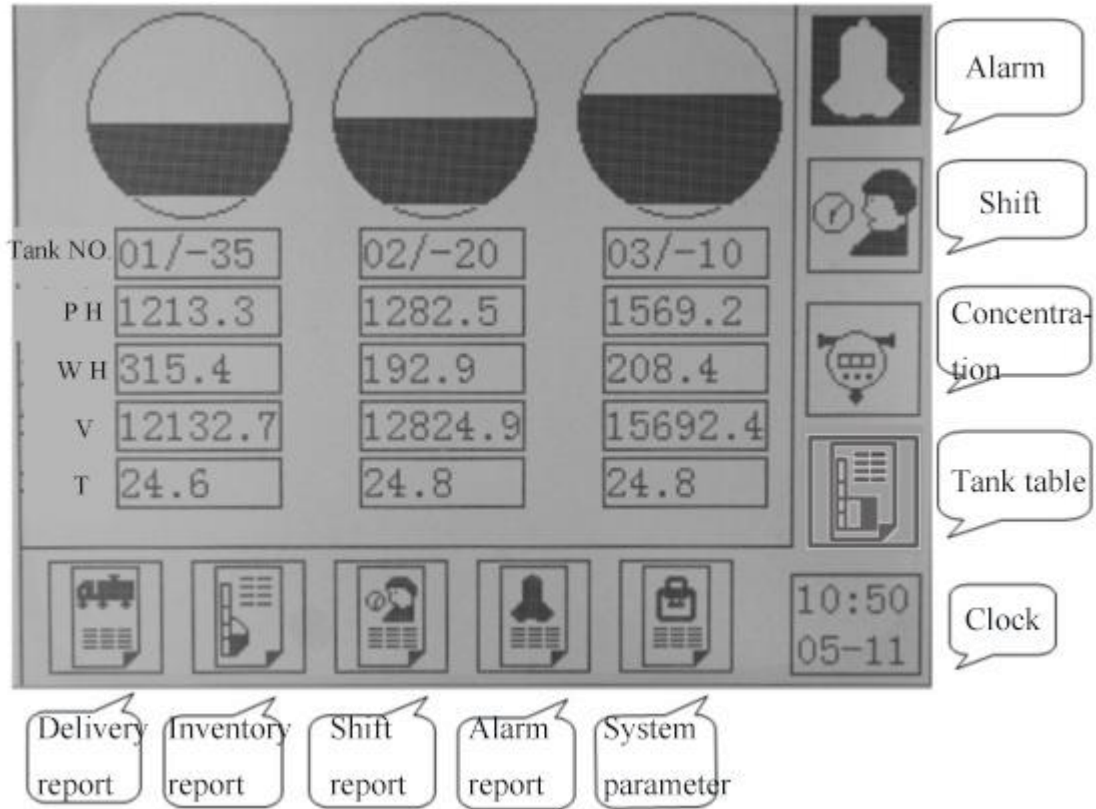
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2.3. Connection Between Console and PC Software

After installation of console and probe, connect the PC line interface which is in the packing box(RS232 serial line) to the COM1 port of the samrt console. By connected with the background software can set the system parameters, tank table and real-time monitoring. Setting method please see the PC-REMOTE-300 USER MANUAL.pdf file which is in the installation CD.

3. Operation

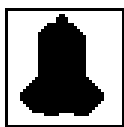
Monitoring Screen (Home page)



After power on, the system will automatically access to the monitoring interface.

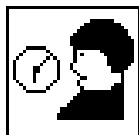
1. The monitoring interface mainly display the real-time information of each tank and the main function of the icon;
2. If initialized operation, the tank information is blank, need to setup system through the background software;
3. If need to achieve some function when system is running, click the “function” button to display the corresponding functional icon, then select the appropriate function, and click “OK” button to achieve.

3.1 Alarm



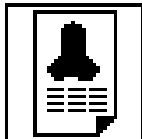
When sound-light alarm of tank ring, (eg: Water high (W H), Product low low(P LL), Product low (P L), Product high (P H), Product high high (P HH), Temperature high (T H), Temperature low (T L)), this icon reverse display. In the monitoring interface click “OK” button to release alarm, the sound-light alarm will stop and the icon will no longer reverse display, at the same time the “alarm information list” will display. "Alarm information list" indicating the type of alarm, press the "back" button to return to the monitoring interface.

3.2 Shift



When shift, by "function" button to select this icon, will appear a “shift confirm” dialog box. Select "OK" to confirm shift, then system will return to monitoring interface directly. At the same time, the system automatically generates shift report; by "function" button to select "Cancel" and press "OK" to return to the monitoring interface.

3.3 Alarm Report



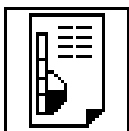
When system receive alarm information, will generate alarm report automatically. In the monitoring interface, click “function” button to select this icon. Click "OK" button to query alarm records. Click "function" button to turn pages, click "back" button to return to the monitoring interface.

3.4 Shift Report



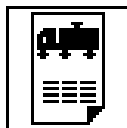
After manual shift, the system will automatically generate the shift records. In the monitoring interface, click "function" button to select the icon, click "OK" button to query shift records. Click "function" button to turn pages, click "back" button to return to the monitoring interface.

3.5 Inventory Report



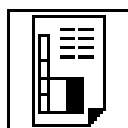
After manual shift, the system will automatically generate the inventory records. In the monitoring interface, click "function" button to select the icon, click "OK" button to query inventory records. Click "function" button to turn pages, click "back" button to return to the monitoring interface.

3.6 Delivery Reports



After manual shift, the system will automatically generate the delivery records. In the monitoring interface, click "function" button to select the icon, click "OK" button to query delivery records. Click "function" button to turn pages, click "back" button to return to the monitoring interface.

3.7 Tank Table








In the monitoring interface, click "function" button to select the icon, click "OK" button to query tank table. Click "function" button to achieve tank switch, click "back" button to return to the monitoring interface.

3.8 Infrared









1) Modification of oil and gas concentration alert value

Press  to enter into the infrared remote control input state, by the up and down direction button to select oil-gas concentration icon  then press OK button  to enter into the parameter modification interface, by the up and down direction button to select the parameters which need to be modified, press delete and numeric key to modify the parameter, then press save button  to save. When all operations are finished, press  to return to the main interface of the system.





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2) Tank table parameter modification

Press  to enter into the infrared remote control input state, by the up and down direction button to select tank table icon  then press OK button  to enter into the parameter modification interface, by the up and down direction button to select the parameters which need to be modified, press delete and numeric key to modify the parameter, then press save button  to save.




Press  to select tank NO, when all operations are finished, press  to return to the main interface of the system.

3) System parameter modification

Press  to enter into the infrared remote control input state, by the up and down direction button to select system parameter icon  then press OK button  to enter into the parameter modification interface, by the up and down direction button to select the parameters which need to be modified, press delete and numeric key to modify the parameter, then press save button  to save.

When all operations are finished, press  to return to the main interface of the system.

4) Delete report file

Press  to enter into the infrared remote control input state, by the up and down direction button to select the report icon which you want to delete. Then press OK button  to enter into the report information interface, press delete button  to delete all information in the report. After deleting, the system will automatically return to the main interface.

4. Report

4.1 Alarm Report

	NO.	Alarm information	Alarm time
01	0031	Tank 01: P H	12-05-07 14: 35
02	0030	Tank 01: W H	12-05-07 14: 32
03	0029	Tank 03: P HH	12-05-07 14: 30
04	0028	Tank 02: P H	12-05-07 14: 28
05	0027	Tank 02: W H	12-05-07 14: 26
06	0026	Tank 03: W H	12-05-07 14: 23
07	0025	Tank 01: P H	12-05-07 14: 21
08	0024	Tank 02: P HH	12-05-07 14: 17
09	0023	Tank 03: P L	12-05-07 14: 14
10	0022	Tank 01: P L	12-05-07 14: 11
11	0021	Tank 03: P LL	12-05-07 14: 07
12	0020	Tank 02: P LL	12-05-07 14: 02

4.2 Shift Report

	Tank	Oil volume	Shift time	Group
01	01/-35	2320.4	12-05-08 09:38	050804
02	02/-10	3367.1	12-05-08 09:38	050804
03	03/90	7610.9	12-05-08 09:38	050804
04	01/-35	6690.7	12-05-08 09:33	050803
05	02/-10	3412.3	12-05-08 09:33	050803
06	03/90	2240.1	12-05-08 09:33	050803
07	01/-35	5903.5	12-05-08 09:27	050802
08	02/-10	4831.4	12-05-08 09:27	050802
09	03/90	5142.6	12-05-08 09:27	050802
10	01/-35	7122.6	12-05-08 09:23	050801
11	02/-10	6344.5	12-05-08 09:23	050801
12	03/90	1329.8	12-05-08 09:23	050801

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4.3 Inventory Report

	Tank	Inventory volume	Status	Time
01	01/-35	1324.7	Shift	12-05-08 13: 44
02	02/-10	2311.9	Shift	12-05-08 13: 44
03	03/90	2894.4	Shift	12-05-08 13: 44
04	01/-35	3597.6	Shift	12-05-08 13: 42
05	02/-10	3972.1	Shift	12-05-08 13: 42
06	03/90	4211.7	Shift	12-05-08 13: 42
07	01/-35	4789.2	Shift	12-05-08 13: 37
08	02/-10	4529.5	Shift	12-05-08 13: 37
09	03/90	6012.1	Shift	12-05-08 13: 37
10	01/-35	5937.4	Shift	12-05-08 13: 34
11	02/-10	6327.7	Shift	12-05-08 13: 34
12	03/90	6104.5	Shift	12-05-08 13: 34

4.4 Delivery Report

	NO.	Tank	Delivery volume	Delivery time
01	0093	01/-35	2317.9	12-05-08 15:54
02	0092	02/-10	1948.4	12-05-08 15:52
03	0091	03/90	2014.8	12-05-08 15:50
04	0090	01/-35	3691.2	12-05-08 15:48
05	0089	02/-10	3325.9	12-05-08 15:46
06	0088	03/90	2109.5	12-05-08 15:44
07	0087	01/-35	4013.7	12-05-08 15:42
08	0086	02/-10	3981.3	12-05-08 15:37
09	0085	03/90	4109.7	12-05-08 15:35
10	0084	01/-35	4231.3	12-05-08 15:32
11	0083	02/-10	2345.8	12-05-08 15:29
12	0082	03/90	4723.4	12-05-08 15:27

5. Relay

With the change of oil level and water level, if there is an alarm, the relay will act, and the specific actions are as follows:

Corresponding tank NO.	Alarm type	Action relay	Press release alarm button
1#	PH	1#, 2# relay	1# relay recovery
	PL	1#, 5# relay	1# relay recovery
2#	PH	1#, 3# relay	1# relay recovery
	PL	1#, 6# relay	1# relay recovery
3#	PH	1#, 4# relay	1# relay recovery
	PL	1#, 7# relay	1# relay recovery

6. Common Failures and Solutions

- After starting the smart console, parameters like tank, oil level, water level, capacity and temperature are not display.
- ✓ Not set the system parameters, set through the backstage software.

- Volume item no display or display "0".
- ✓ Not import tank table, import tank table through backstage software.

- Tank item display “communication outage”.
- ✓ Check if the connection between the console and probe is stable.
- ✓ Check if the probe address setting is correct.

- Oil high or water high item display “data error”.
- ✓ Probe failure, please contact the dealer.

- Probe display data is not in conformity with the manual measurement.
- ✓ Check if the probe is installed vertically.
- ✓ Re-correction the modification value of oil level and water level.

- Volume value error.
- ✓ Check if the display height value of console is the same as the manual measurement value.
- ✓ Check if the tank table setting is correct.

7. Warranty and Maintenance

The warranty period of the product is one year, if failures occur under normal use, can enjoy free maintenance and service. If failures caused by natural disaster and non-normal use does not belong to the warranty scope. For damaged parts, the company provide paid replacement and maintenance.

If user can not rule out the failure, can notify the vendor to repair or send the product back to our company; and we will troubleshoot failures with the fastest speed and send product back to the user.

8. Contact Us

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