

BZL-10B 轴电流继电保护装置

调试运行指南



哈尔滨华新电力电子设备有限公司

1 继电器前后面板功能简介

1.1 前面板



●1 设置状态显示: 显示当前设置状态，无显示为正常监测状态。

●2 当前数据显示

●3 报警状态显示

●4 当前监测频率显示

●5 Δ 设定值加

●6 ∇ 设定值减

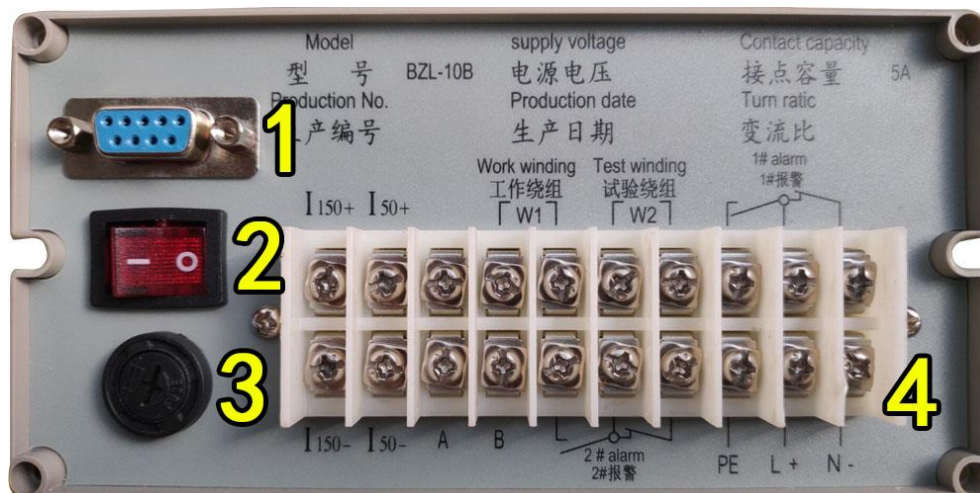
●7 设置/复位: 键切换设置状态或复位

●8 试验键: 按下此键进入试验状态

●9 试验状态指示灯: 进入试验状态此灯亮

●10 试验电流调节旋钮: 自检状态下调节试验电流

1.2 后面板



- 1. 232 通讯接口可将数据传至上位机在线监测
- 2. 电源开关
- 3. 熔断器
- 4. 接线端子

2 继电器的设置

2.1 1#报警设置:



- 按下**设置**键，数码管第一位显示 1。
- 按△或▽设定 1#报警值，例如 0.60 为 0.6A（出厂设置为 0.5A）。
- 按设置键复位（直至第 1 位数码管无显示），进入正常监测状态。

2.2 2#报警设置:



- a. 按下**设置**键，数码管第一位显示 2。
- b. 按△或▽设定 2#报警值，例如 1.15 为 1.15A（出厂设置为 1.5A）。
- c. 按**设置**键复位（直至第 1 位数码管无显示），进入正常监测状态。

2.3 延时设置



- a. 按下**设置**键，数码管第一位显示 3。
- b. 按△或▽设定延时（接点动作），例如 015 为 15 秒（出厂设置为 30 秒，建议其设置不应低于 10 秒）。
- c. 按**设置**键复位（直至第 1 位数码管无显示），进入正常监测状态。

（注：设置键按一次第一位显示“1”，再按显示“2”，第三次按显示“3”，第四次按复位。）

3 设备的自检

！注意：自检功能用于验证设定值准确性,执行此功能时无延时及触点输出。

3.1 装置自检:

a. 按下**试验**按钮, **试验**指示灯亮。



b. 调节**试验电流调节**旋钮至 1#报警设定值, 1#报警信号灯亮。



c. 继续调节**试验电流调节**旋钮至 2#报警设定值, 2#报警信号灯亮时。

装置正常

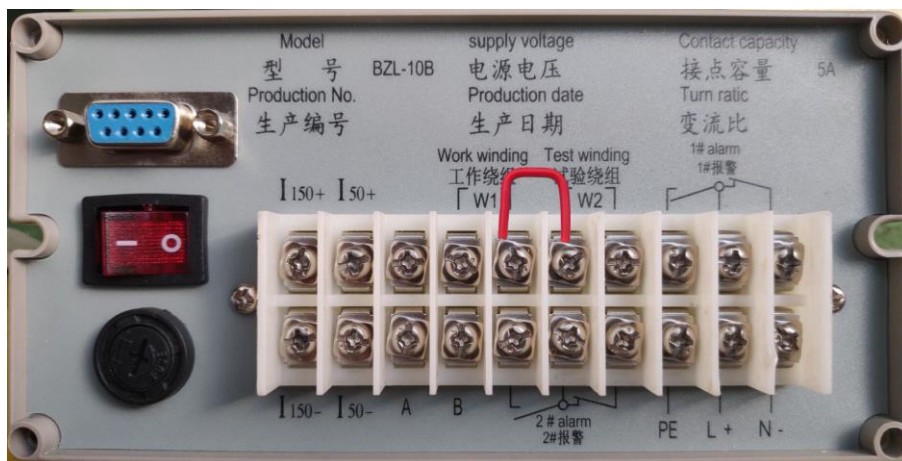
d. 自检完毕后将电位器退回原位。



3.2 继电器自检:

按照图将 W1、W2 相邻段子用导线短接，其余同上。

自检完毕后将电位器退回原位。

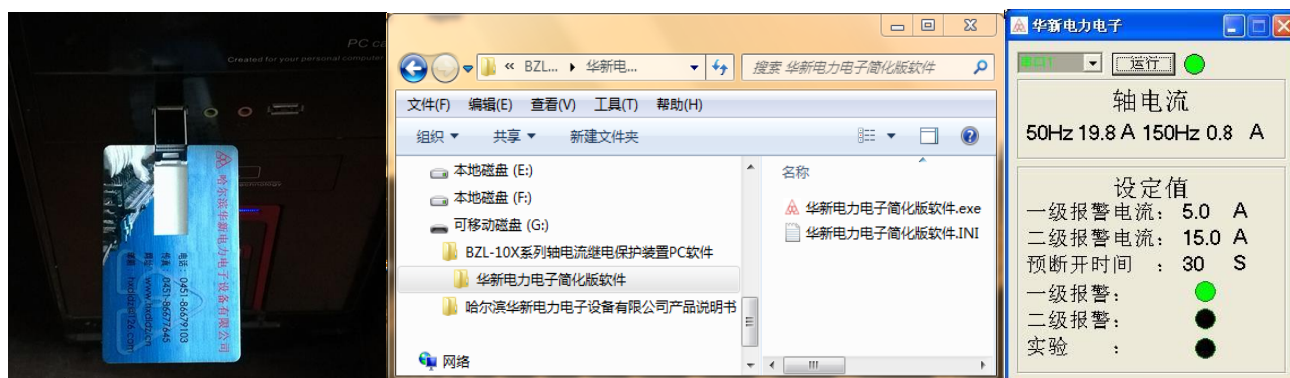


此功能正常，亦可证实本设备无故障。

4 上位机监测

4.1 驱动程序的安装

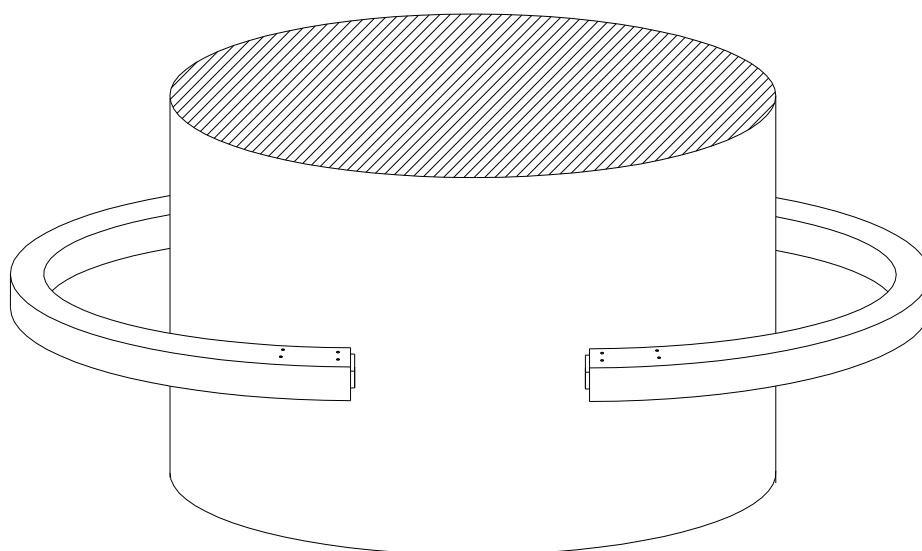
将 U 盘与计算机相连，运行相对应的文件即可。



4.2 232 通讯接口

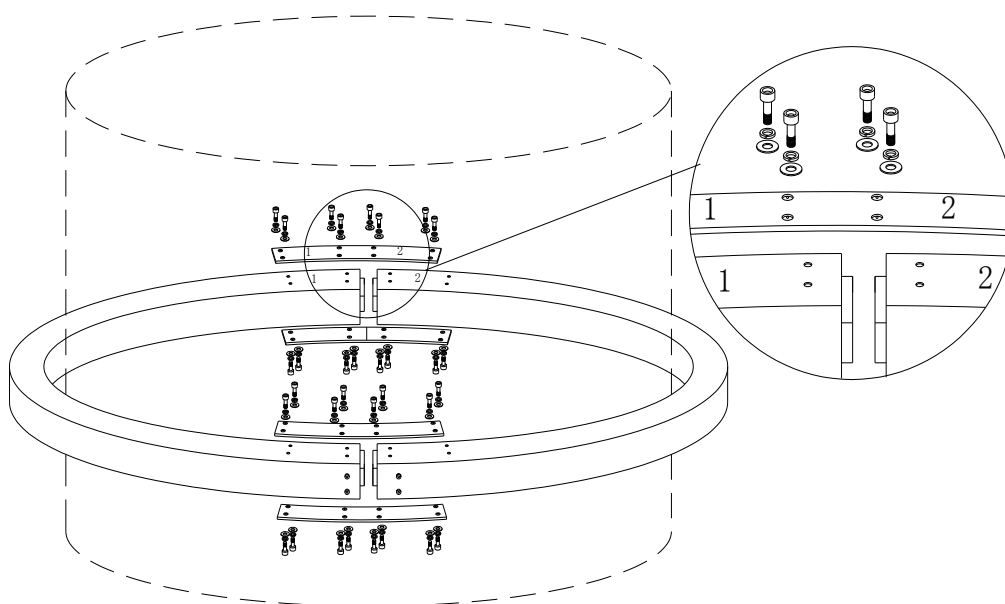
按照产品说明书将 232 接头（随机配置）与导线（屏蔽电缆）焊好，分别和上下位机接好，即可实现在线检测。建议通讯距离不大于 30 米。

5 互感器的安装与接线



5.1 图

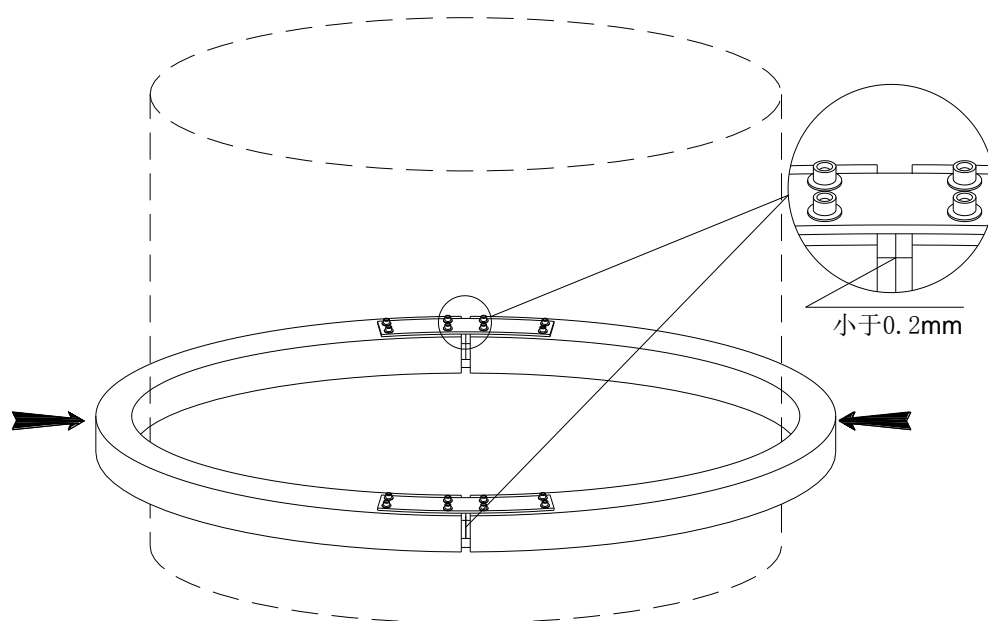
5.1、卸下互感器连接板，将互感器两半分开后套在发电机轴的安装位置上（按照互感器上的标识 1 对 2、3 对 4，切勿上反）。



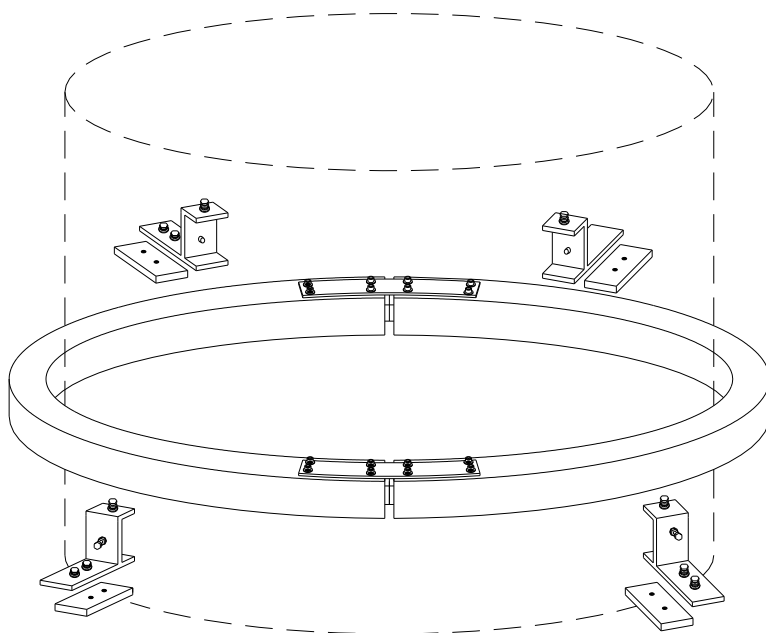
5.2 图

5.2、按照互感器上的标识找出对应的连接板，用螺栓可靠预装在一起。

5.3 按照箭头方向推挤，同时将连接板螺栓旋紧并保证各螺栓紧固力矩相同，互感器切口处间隙小于 0.2mm。



5.3 图



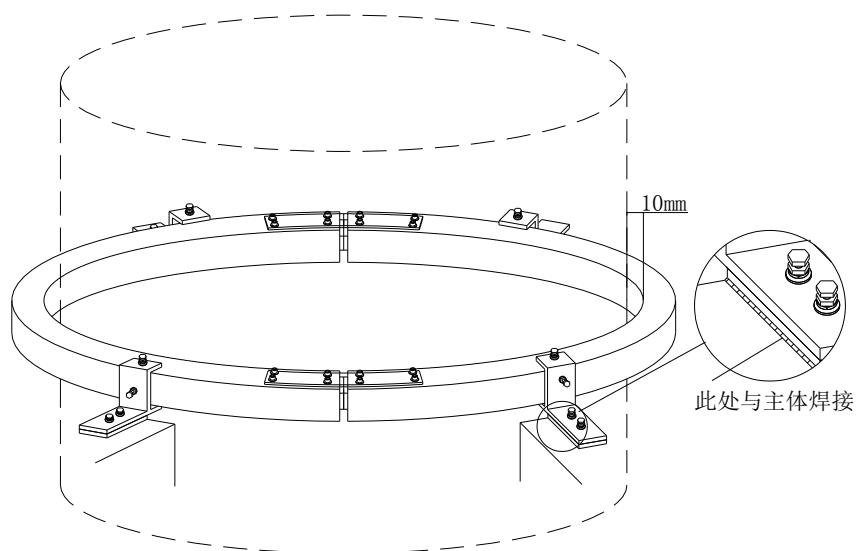
5.4 图

5.4、把安装支架等分装在互感器的外侧，并把支架配套的与主体焊接用的过渡连接板与支架安装在一起。

5.5、与主体的焊接：

5.5.1 调节并保证互感器与机轴的水平度与同心度：水平度误差为 2mm，互感器与机轴的同心度误差为 $10 \pm 1\text{mm}$ 。

5.5.2 把支架配套的过渡连接板与主体焊接在一起，对互感器要充分遮挡，避免焊接时灼伤、损坏。



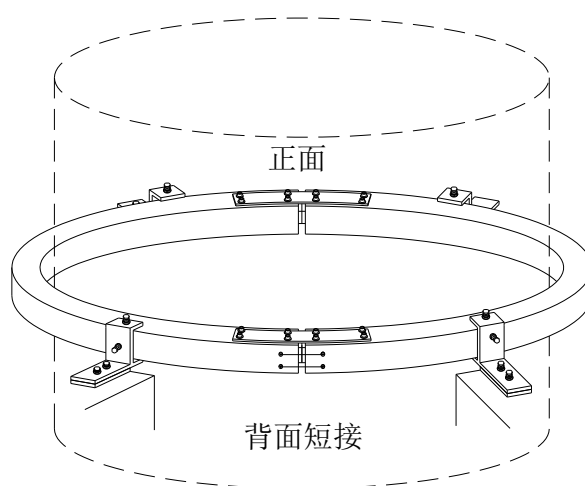
5.5.1 图

5.5.3 再次调节互感器与机轴的水平度与同心度及切口间隙并满足公差要求。

如有必要可在支架与互感器间加适当厚度的垫片以满足水平度公差要求，垫片面积应略大于互感器与支架的接触面积。

5.6 接线:

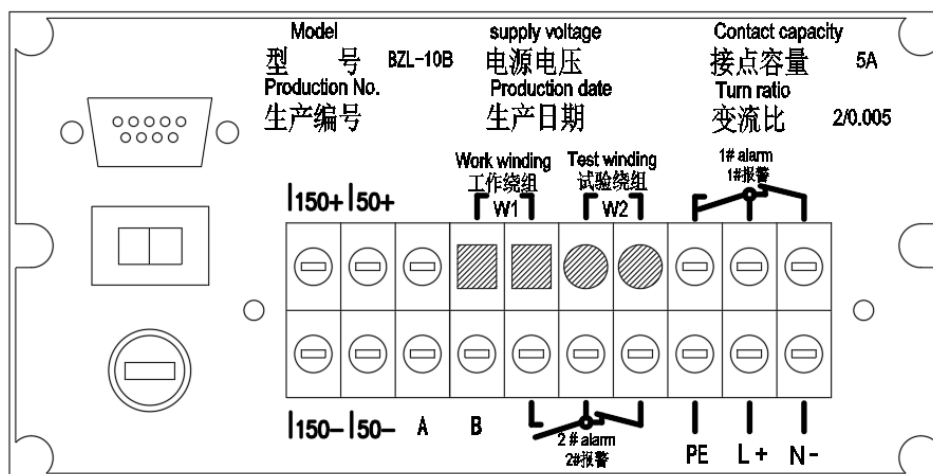
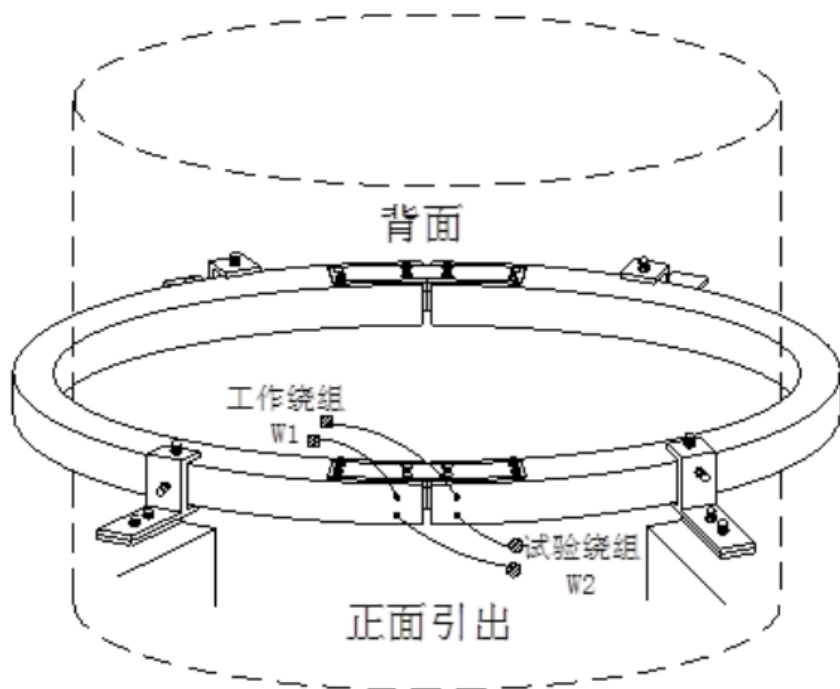
5.6.1 背面: 将互感器左右两半水平方向靠上的两个端子和靠下的两个端子分别用短接线短接（短接线为随机配置）。



5.6.1 图

5.6.2 正面: 将互感器左右两半水平方向靠上的两个端子和靠下的两个端子分别用屏蔽电缆引出至继电器后面板的工作绕组（W1）和试验绕组（W2）。

注：工作绕组（W1）和试验绕组（W2）可互换。



5.6.2 图

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BZL-10B Shaft Current Relay Protection Equipment Guide of Debug and operation



Harbin Huaxin Power Electronic Equipment Co., Ltd.

The operation of BZL-10B

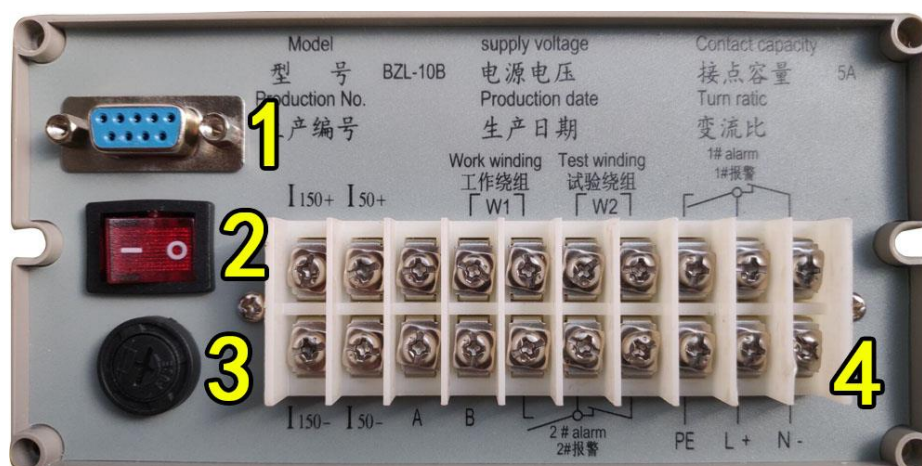
1 Front Panel and Rear Panel

1.1 Front Panel Components



- 1. STATE OF SETUP: Shows current state of SETUP. Blank stands for normal monitoring state.
- 2. CURRENT DATE DISPLAY
- 3. ALARM STATE
- 4. MONITOR FREQUENCY
- 5. “△” Increase the value of setup
- 6. “▽” Decrease the value of setup
- 7. SETUP/RESTORE key: Switch the state of SETUP or RESTORE
- 8. TEST KEY: push to enter test mode
- 9. TEST LIGHT: When shining, test program starts.
- 10. TEST CURRENT ADJUSTMENT KNOB, Adjust the test current under the self-test state.

1.2 Rear Panel Components



●1. RETRANSMIT OUTPUT

Date could be transmitted to the equipment to monitor online

●2. POWER key

●3. FUSE

●4. CONNECTIONS

2 Setup

2.1 1# ALARM SETUP



a. When presses SETUP, the first place of Digit LED shows “1” .

b. Press UP/DOWN key to set 1# alarm parameter, e.g. 0.60 equals 0.6A.

(0.5A set on leaving factory)

- c. Press MODE to resort (till the first place of Digit LED displays blank) to the normal monitor state

2.2 2# ALARM SETUP



- a. When the SETUP key is pressed again, the first place of Digit LED shows “2” .
- b. Press UP/DOWN key to set 2# alarm parameter, e. g. 1.15 equals 1.15A. (1.5A set on leaving factory)
- c. Press SETUP key to restore (till the first place of Digit LED displays blank) to the normal monitor state

2.3 DELAY SETUP



- a. Press SETUP key the third time, the first place of Digit LED shows “3” .
- b. Press UP/DOWN key to set delay, e. g. 015 equals 15 seconds (30s set

on leaving factory, not less than 10s is suggested)

- c. Press SETUP key to resort (till the first place of Digit LED displays blank) to the normal monitor state (Note: press the SETUP key displays “1” , and again displays “2” , the third time displays “3” , the fourth time to reset)

3 SELF-TEST

3.1 Function

This function is used to examine the accuracy of the set value. No output of delay and set point in this state

3.2 Equipment self-test

- a. Test light shines when press TEST key



- b. Revolving the Test Electricity Current Adjustment Knob to 1# Alarm set value and 1# Alarm light shines



c. Continue to revolve the Test Electricity Current Adjustment Knob to 2# Alarm set value. 2# Alarm light shines or delay starts.

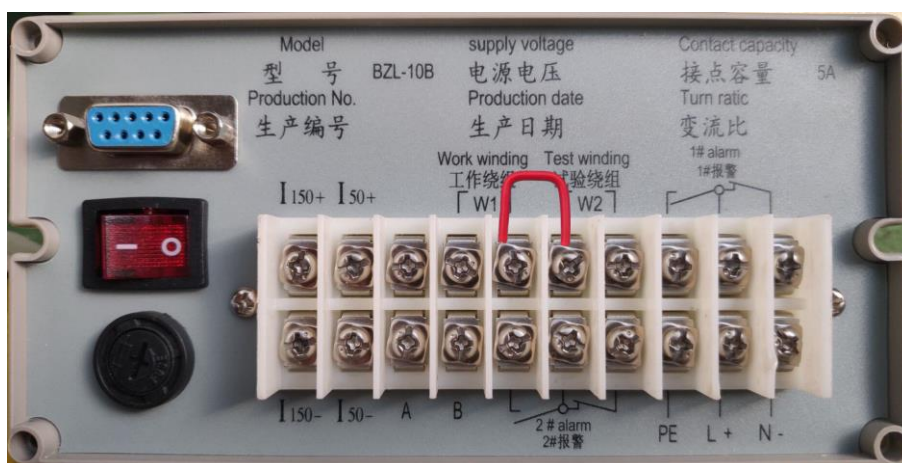
Equipment normal.



3.3 Self-test of relay

Link the contiguous terminals of W1 and W2 with conducting wire according to the figure below. Other steps are same as above.

Adjust the potentiometer to its initial position while the self-test is finished.

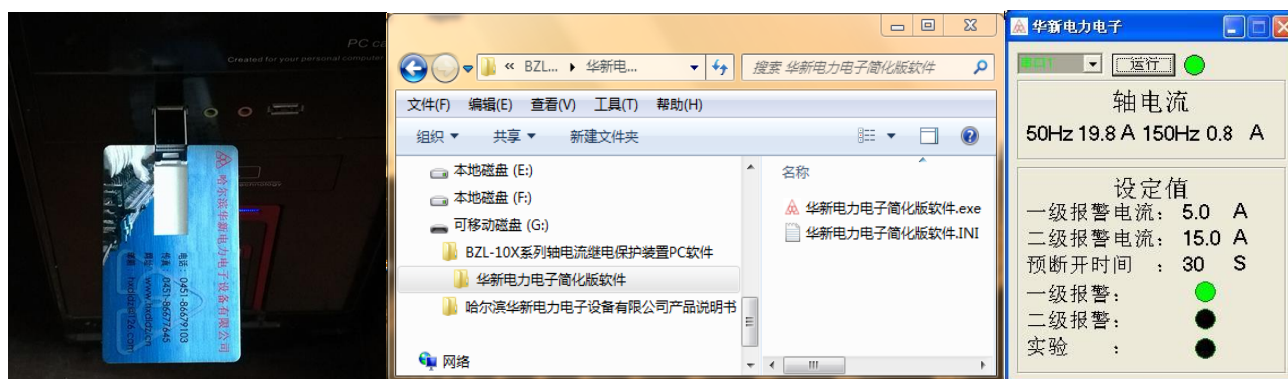


The normality of this function indicates the running well of this equipment.

4 Monitor

4.1 Installation of Driving Program

Will USB flash drive connected to the computer, run for file.



4.2 232 Retransmit Joint

Weld the 232 Retransmit joint and the conducting wire (screen cable) according to the specification and online inspect could be carried out when they are connected to the host and target computer. The recommended communication distance should be within 30 meter.

5 Transformer installation and wiring

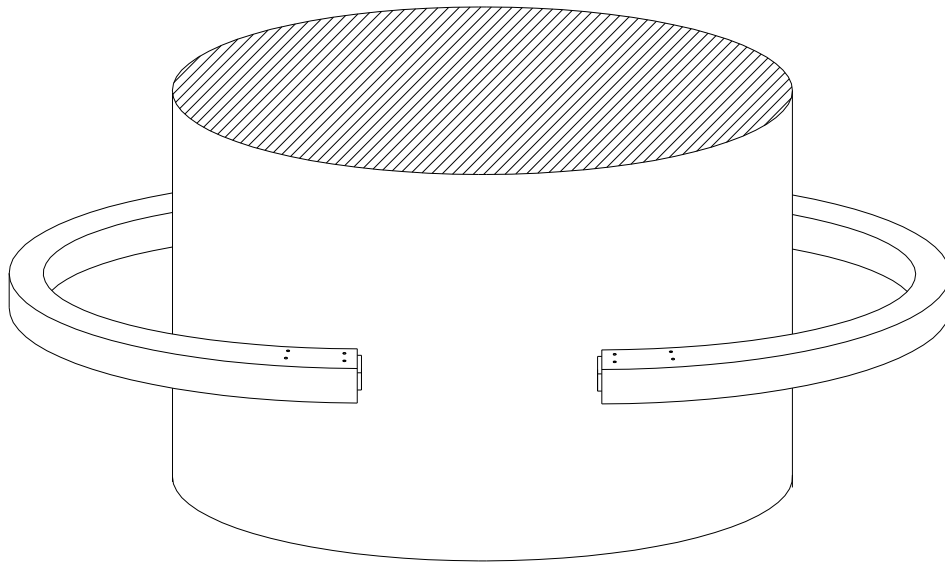


Figure 5.1

5.1 Remove the transformer connection plate, the transformer in two separate after the installation position of the generator shaft (in accordance with the instrument on the identification of 2 pairs of 1, 3 to 4, not on the anti).

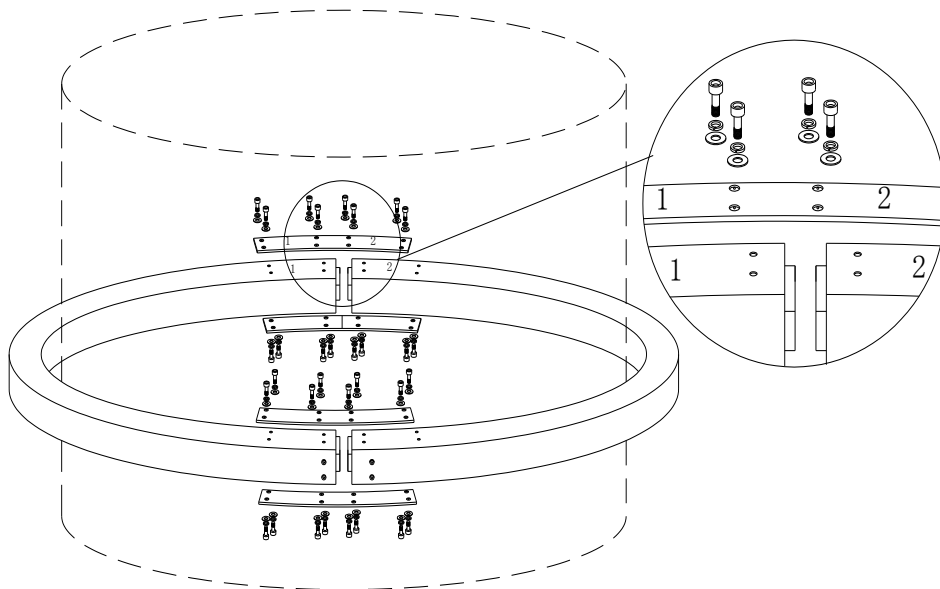


Figure 5.2

5.2 According to the identity of the transformer to identify the corresponding connecting plate, with a bolt reliable pre installed together.

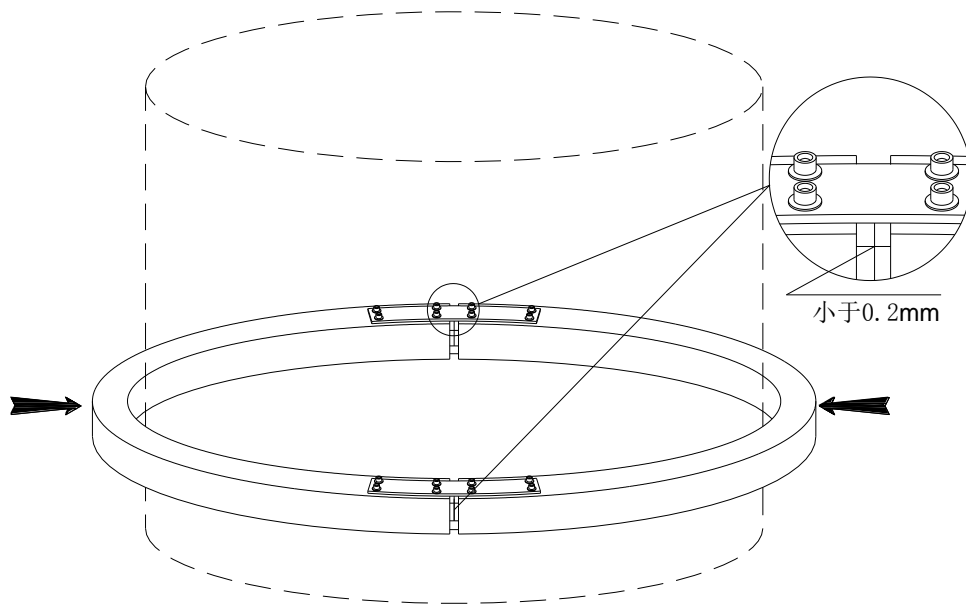


Figure5.3

5.3 In the direction of the arrow push, as well as the connection plate bolts are screwed tightly and ensure that the bolts tightening torque of the same, the transformer incision gap less than 0.2 mm.

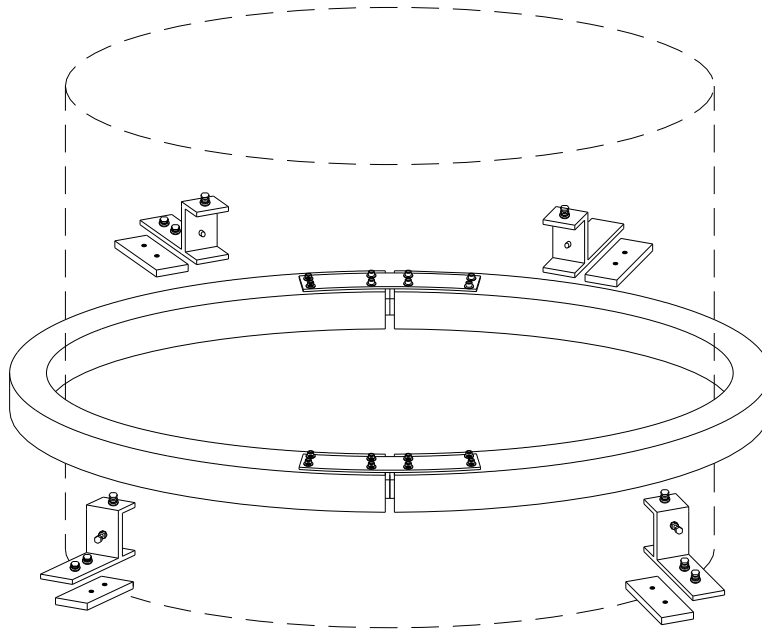


Figure5.4

5.4 the installation bracket is installed in the outer side of the transformer, and the supporting frame and the main body of the welding with the transition connecting plate and bracket installed.

5.5 with the main body of the welding:

5.5.1 regulation and ensure the transformer and the crankshaft of the level of degree and concentricity: horizontal error is 2mm, transformer and shaft concentricity error for $10 + 1\text{mm}$.

5.5.2 supporting the supporting of the supporting plate and the main body welded together, the transformer should be fully shielded to avoid welding burns, damage.

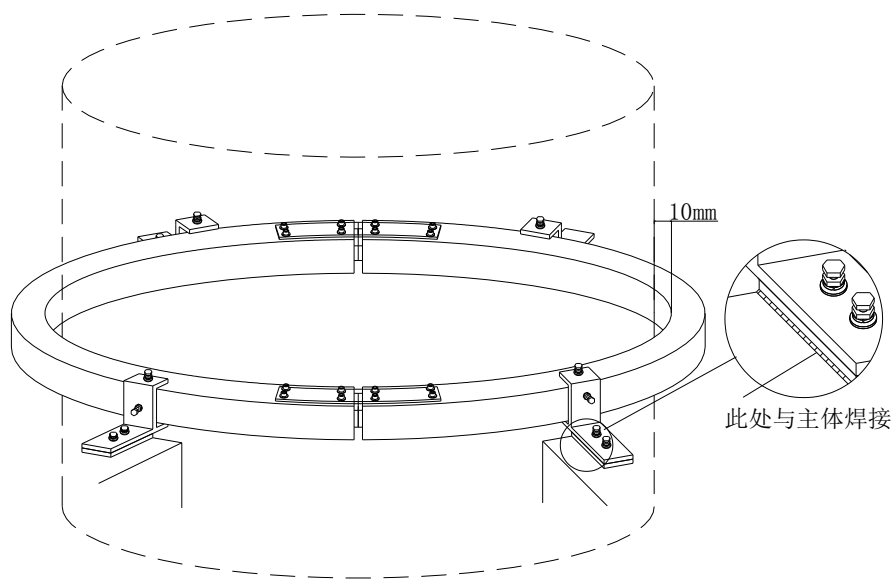


Figure 5.5.1

5.5.3 Once again adjust transformer and shaft level and concentricity and the gap and meet the tolerance requirements. In order to meet the requirement of horizontal tolerance, the gasket area should be slightly greater than the contact area of the mutual inductor and the support, if necessary, the gasket can be added to the bracket and the mutual inductance between the two transformers.

5.6 wiring:

5.6.1 positive: about transformer in two horizontal directions on the two

terminals and by two terminals respectively with shielded cable leads to relay panel working winding (W1) and test winding (W2).

Note: the working winding (W1) and (W2) interchangeable winding test.

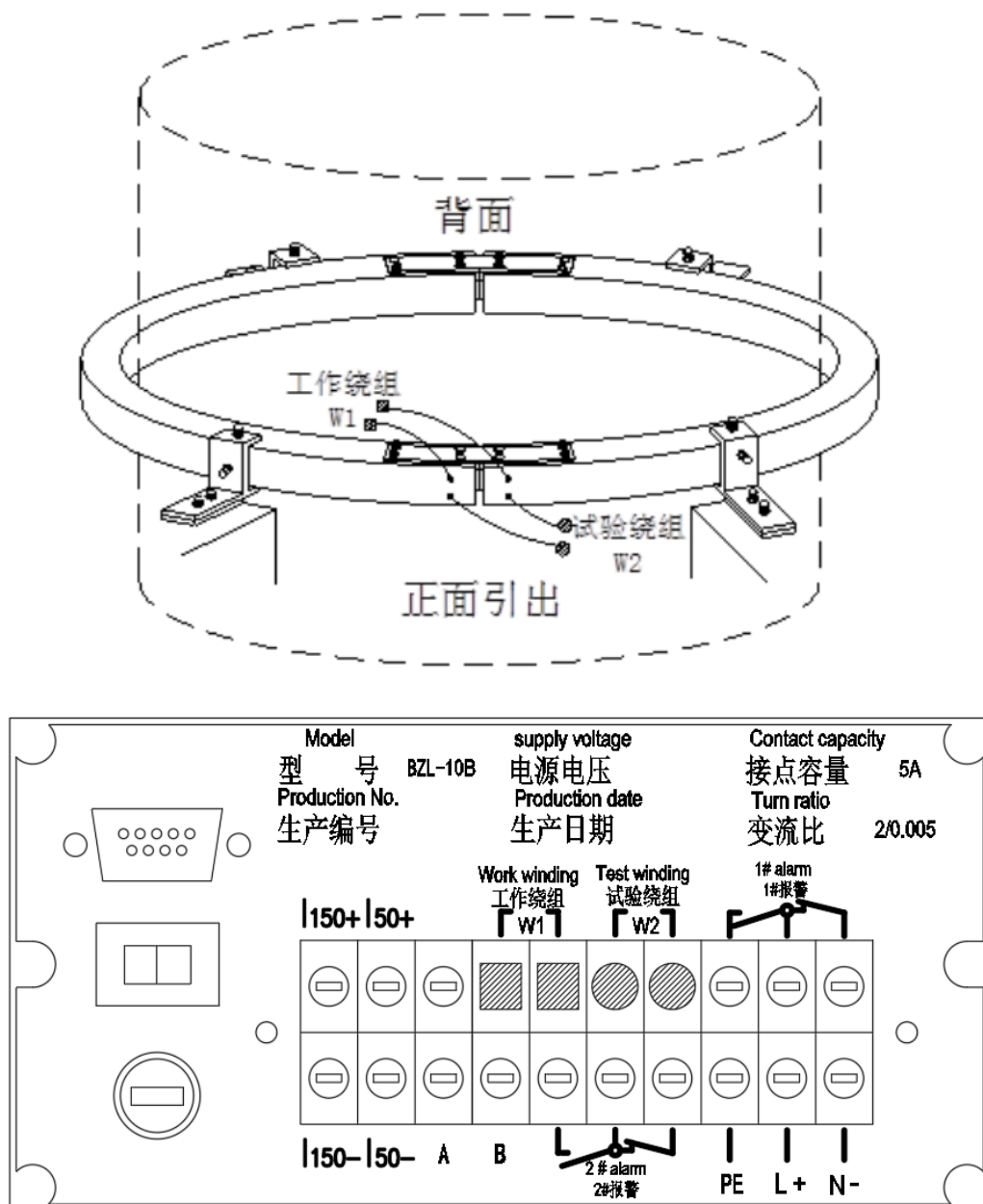


Figure 5.6.1

5.6.2 back: the two terminal and the two terminal on the two halves

of the transformer are respectively connected with the shortterminal(short connection to the random configuration).

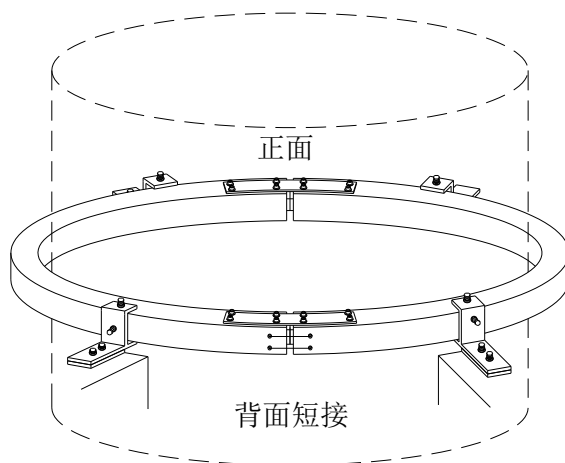


Figure 5.6.2

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