

符号及相关定义 Symbols and related definitions

- ① I_{nm} 控制器与之配套的断路器的壳架等级电流 Matched frame level current of Circuit breaker for the Controller
- ② I_n 与断路器配套使用的控制器的额定电流 Matched rated current of controller for the circuit breaker
- ③ I_r 长延时整定值 Long time delay setting
 I_{sd} 短延时整定值 Short-time delay setting
 I_i 瞬时整定值 Instantaneous setting
 I_g 接地整定值 Ground setting
 I_p 负载预报警电流 Load pre-alarm current
 I_e 额定工作电流 Rated working current
- ④ t_r 长延时整定动作时间 Long time delay setting operation Time
 t_{sd} 短延时整定动作时间 Short-time delay setting operation Time
 t_g 接地整定动作时间 Ground setting operation Time
 t_u 欠压延时整定动作时间 Under-voltage delay setting operation Time
- ⑤ T 控制器实际脱扣动作时间 Actual tripping time of controller
- ⑥ I 实际电流值 Actual current
- ⑦ 定时限脱扣：经过一定延时后发生脱扣动作。延时时间可调整设定，一经设定便不受过电流值的影响。 Definite time trip: Tripping action occurs after a certain delay. Delay time can be adjusted, once set, it's not affected by the current value.
- ⑧ 反时限脱扣：经过一定延时后发生脱扣动作，延时时间与通过的电流值的平方成反比关系。电流值愈大，动作时间愈短。 Inverse time trip: Tripping action occurs after a certain delay, delay time is inversely proportional to the square of current value passing through. The higher the current value, the shorter the action time.
- ⑨ 瞬时脱扣：没有人为延时即发生脱扣动作 Instantaneous trip: Tripping occurs without artificial delay

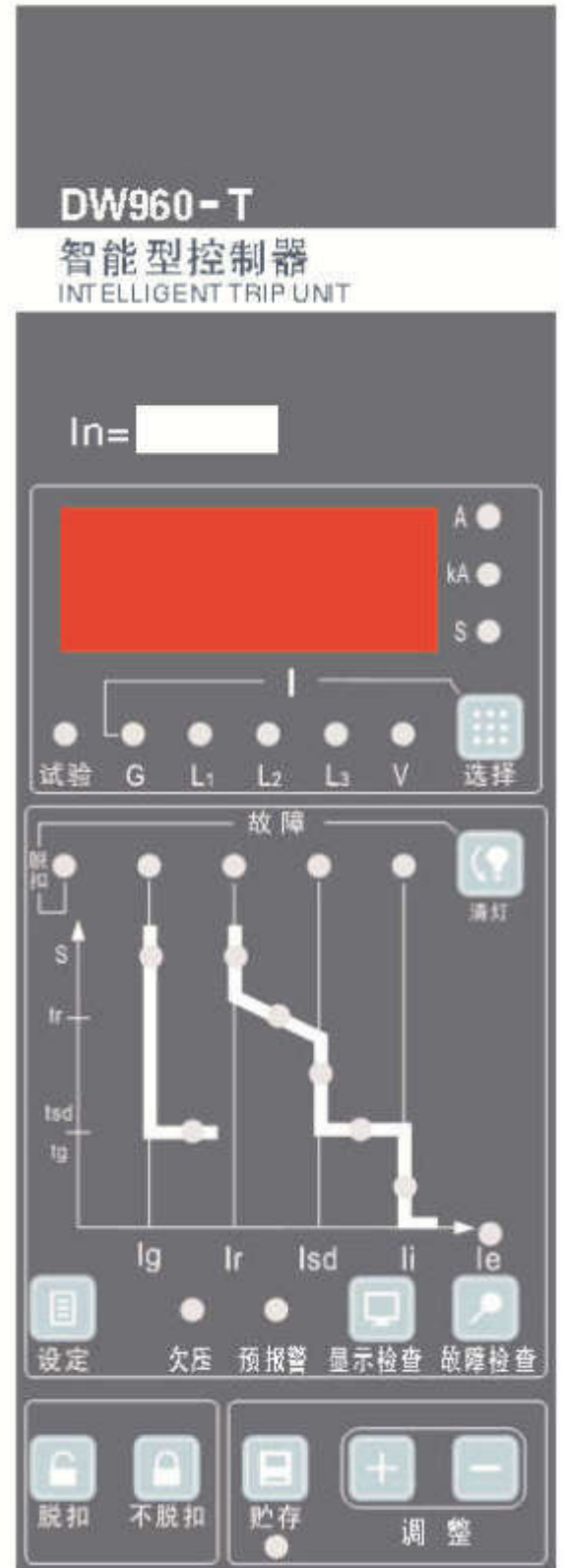
控制器的操作说明 Operating Instructions of controller

1 参数整定步骤 Parameter setting steps

用控制器面板上的**设定**、**+**、**-**和**贮存**等四个功能键可以整定控制器的各种参数。其基本步骤如下：

Use controller **Set**、**+**、**-** and **Store** four function keys to set various parameters of the controller. The basic steps are as follows:

- ①、连续按**设定**键，可以循环检查控制器所有的整定参数。当检查到某个参数时，显示屏上显示该参数的原整定值，同时面板上与之对应的黄灯亮。若不需改变此参数则继续按**设定**键。Continue to press **Set** key, could cycle check all controller setting parameters. When one parameter is checked, the original setting value of the parameter is displayed on the display screen, and the corresponding yellow light on the panel is on. Continue to press **Set** key if do not need to change the parameter.
- ②、若需要改变原整定参数，则连续点按**+**、**-**键，直到屏幕显示您需要的数值。Continue to press **+**、**-** key if need to change the original setting parameter, until the screen displays the value you want.
- ③、按**贮存**键，保存当前设定的新参数。如果不需要设定其它参数项，到第④步。反之则到第①步。Press **Store** key, save the new setting parameter. If do not need to set other parameters, go to step ④. Conversely, to step ①.
- ④、按**清灯**键，退出设定状态。Press **Clear display** key, exit the set state.



2 试验操作 Test operation

控制器可以进行接地、长延时、短延时、瞬动的特性试验。如果在试验过程中，出现过载或短路等故障情况，系统自动终止试验状态并转入延时动作状态。实验操作的基本步骤如下：Controller can do grounding, long time delay, short-time delay and Instantaneous characteristic test. If overload or short circuit occurs during the test, the system will automatically terminate the test state and move into the delayed action state. The basic steps of experimental operation are as follows:

- ①、连续按**设定**键, 检查欲进行试验项目的整定值。Continue to press **Set** key, Check the setting value of the test item to be carried out.
- ②、连续按**+**或**-**键, 调整进行试验的动作电流值(注意此时不能按**贮存**键, 否则将修改整定参数)使显示电流值不小于已经设定整定值。Continue to press **+**、**-**key, adjust the operating current value of the test(Note that **Store** key can not be pressed at this time, otherwise, the setting parameter will be changed), make the displayed current value not less than the set value.
- ③、根据是否分断断路器的试验要求, 按**脱扣**键或**不脱扣**键, 这时“**试验**”灯亮, 在延时结束后, 显示屏显示脱扣延时时间(按**故障检查**键可以观察设定的试验脱扣电流)。According to the test requirements of whether to break the circuit breaker, press **Trip** key or **Don't trip** key, “test” light is on. At the end of the delay, the screen displays the time of tripping delay(Press **Failure checking** key, setting test trip current can be observed)
- ④、按**清灯**键, 控制器返回工作运行状态。Press **Clear display** key, controller returns to work status.

注意：在做某项试验时，如果该项目的整定值已经是值域的最大值，而试验要求的电流大于该值，您可以按**设定**键到参数范围更宽的项目上设定试验电流。例如，设控制器的 $I_n=1000A$, $I_r=1000A$, $t_r=30S$, $I_{sd}=4000A$ 。如果您要作试验电流为 3000A 的长延时试验，则应当连续按**设定**键，直到显示屏显示 I_{sd} 的整定值时，再用**-**键把显示电流值调整到 3000A，然后根据试验要求按**脱扣**键或**不脱扣**键。Note: When performing an experiment, if the setting value of is already the maximum value of the value range, but the current required by the experiment is greater than this value, please press **Set** key to set the test current on the item with wider parameter range. For example, suppose the controller $I_n=1000A$, $I_r=1000A$, $t_r=30S$, $I_{sd}=4000A$. If you want to do a long time delay test (test current is 3000A), press **Set** key continuously until the I_{sd} setting value is displayed on the display screen, then use the **-** key to adjust the display current value to 3000A, and then press the **Trip** key or **Non trip** key as required by the test.

3 电流表功能操作 Ammeter function operation

在控制器正常工作的情况下，控制器循环显示电压值和各相电流值，也可连续按**选择**键，循环显示 A、B、C、接地相、N 相（可选）和电压值，同时 L1、L2、L3、G、G 闪烁和 V 灯循环点亮。如果控制器进入延时动作状态则所有的按键被锁住，此时选择无效；如果控制器仅处于只报警不脱扣状态（时间整定值为 OFF），则可以执行选择功

能。 Under the condition that the controller works normally, controller circulates the voltage and current values of each phase, press **Select** key continuously, cyclic display of A, B, C, grounding phase, N phase (optional) and voltage values, meanwhile L1, L2, L3, G, G flicker and V light cycle lighten. If controller enters the delayed action state, all the keys are locked, selection is not valid; If controller is only in alarm and no trip state (time setting is OFF), can perform the selection function.

4 故障检查操作 Failure checking operation

控制器发出脱扣信号后，断路器分断，如果控制器未掉电则处于故障显示状态(没有人为干预时,循环显示故障脱扣延时时间和故障电流或电压值)。这时重复按**故障检查**键，可手动循环显示故障时的时间和电流（或电压）。按**清灯**键退出本次故障显示，进入正常运行。如果在正常运行状态下想查阅上一次脱扣的情况可以按**故障检查**键，然后重复前面的操作。 After the controller sends out the trip signal, circuit breaker break, if the controller does not lose power, it will be in the fault display state (when there is no human intervention, the fault trip delay time and fault current or voltage value will be displayed in the loop). At this point, please press **Fault check** key repeatedly, time and current (or voltage) during failure can be displayed manually in circulation. Press **Clear display** key to exit the fault display, go to normal operation. If you want to check the last trip under normal operation, press **Fault check** key and repeat the previous operation.

5 欠压脱扣功能（可选） Under-voltage trip function(Optional)

当欠压保护功能打开时，发生欠压则按照设置的欠压延时时间动作。 When the under-voltage protection function is turned on, under-voltage will act according to the time when the under-voltage is set.

6 全灯检查功能 Display checking function

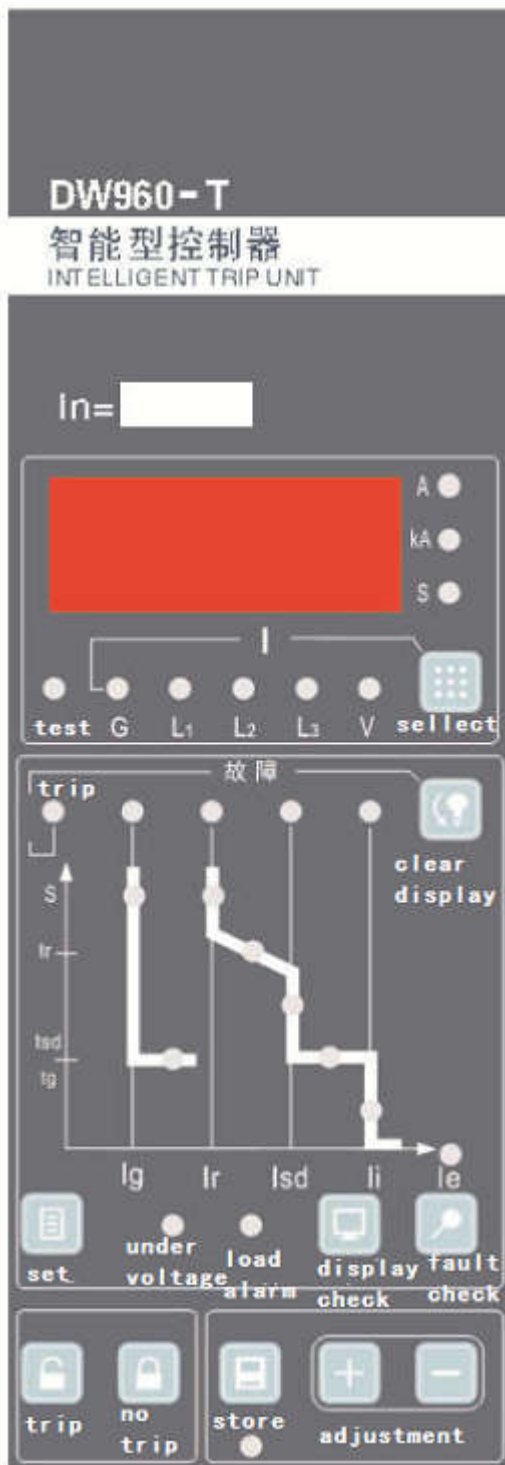
“清灯”后按住**显示检查**键三秒钟，所有灯及数码管应全部点亮，用此功能来检查所有发光器件是否正常，松开则所有灯熄灭返回到运行状态。 After “clear display”, press **Display check** key three seconds, all lights and digital tubes should be turned on, use this function to check whether all light emitting devices are normal, all lights will turn off and return to the operating state if the light is released.

7 故障跳闸后重合闸 After the fault tripping, reclose

控制器跳闸后，必须按**清灯**键才能进行合闸。 After controller tripping, **Clear display** key must be pressed, then could switch on.

8 失电跳闸 Lose power to trip

当辅助电源和欠压同时掉电时，控制器瞬时脱扣。 When the auxiliary power supply and the under-voltage both lose power, controller is instantaneous trip.



智能控制器 Intelligent controller

试验 Test

故障 Fault

选择 Select

脱扣 Trip

清灯 **Clear display**

设定 Set

欠压 under-voltage

负载 Load

显示检查 Display check

故障检查 Fault check

不脱扣 Non trip

贮存 Store