



VEBKO ONLINE HELP

Non-Directional Overcurrent Protection Test in AMR Relay (Simple Test Using Templates)

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AMR modular relay of Vebko company supports various protection functions. Explanations of the capabilities and software environment of this relay have already been presented in the video related to differential protection test.

After connecting to the AMR relay at first, simply load the device's hardware configuration from the Device menu by selecting the Read Hardware from Relay option. The default password is 123456 to receive elements. At this point, a message is given to remove the signal, which if confirmed, if the current hardware is not the same as the relay hardware, the current hardware signals used in the VFC section are deleted.

It should be noted that the settings for the conversion ratio of voltage and current transformers are determined in the related card. Here the ratio of current card conversion is 200A to 1A.

(First, enter the VFC page): As mentioned earlier in the AMR software, config of some of the most widely used functions as are placed in the software as sample the user can send new settings to the relay by selecting each of them and applying the desired changes. For this purpose, a set of functions can be seen in the Relay VFC tab and in the Temp Functions section. It should be noted that by selecting each Temp Function, the blocks in the VFC are removed.

Here the non-directional overcurrent function displayed under the name OC 50/51 is selected. In configuring this function, an OC Inverse block and two OC Definite blocks are used. They have different settings and the signals of a current card are assigned to their input (from a measuring point). Finally, output signals are assigned to Binary Outputs and relay LEDs by Output and LED blocks. To change the settings, simply right-click on each block to access a set of options. Finally, the changes are sent to the relay.

In this video, by double-clicking on blocks that contain constant time stages for non-directional overcurrent function, disables them and define the 1A and TMS current settings equal to 0.1 by double-clicking on the first stage, which is defined as reverse time.

By making these changes, simply select Send Config and Setting to Relay from the Device menu again. In this way, the settings and configuration applied are moved to the relay.

In the next step, by running AMPPro software and opening the AMT Overcurrent room, it is enough to go to the Object Parameters test section and create the test characteristic after entering the information. Here, a reverse time characteristic is created by 1A and TMS=0.1 current settings. Keep in mind that it is also possible to test this characteristic using the Xrio file.

In order to evaluate the performance of non-directional overcurrent function, two Trip Time and Pickup-Drop Off tests are performed. The purpose of Trip Time is to detect and evaluate the accuracy of the performance time of this function and the purpose of pickup-drop off test is to detect and evaluate the accuracy of the actual current of the performance threshold and of reset threshold of this function.

1 Trip Test

Three states including PreFault, Fault and PostFault are required to perform this test. PreFault time is suitable for 500 milliseconds, fault time should be greater than the maximum trip time, and Post Fault time is at least 500 milliseconds. PostFault time should be increased if the drop-off is not an instantaneous.

The suggested points for reduced time functions are 1.5 times, 2 times and 4 times the regulatory current, and for constant time curves, 1.5 and 2 times the regulatory current.

To detect the regulatory current of the second unit, two points can be added to the amount of 90 and 110 percent of the regulatory current of the second unit.

By adding points, perform the test to check the performance of this function from the point of view of time accuracy.

2 Pickup/Drop-off Test

In order to perform this test, first determine how the diagnosis of pickup and drop-off is performed. This process can be done through a separate contact, namely Start, Relay LED viewing, or changing the setting for instantaneous function and using the trip contact. Here we used the Contact Pickup Relay. You can also put the current fault value in the desired range. Here the fault value is considered 5% by default. The performance range of overcurrent curves in the AMR relay starts from 1.1 regulatory current in the relay. Therefore, first, by enabling the Active Range Limits option in the Overcurrent Protection Parameters window, the Imin value is set to 1.1 Iref. In the next step, the current setting value for the pickup is placed on $1.1 \times 1 = 1.1$ amps. (as it is shown)

By adding points, it is enough to perform the test and add the necessary elements to the report when it is finished.

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