1. SPAJ 144 Relay Model A

The relay type model contains all elements of the actual relay. However, in the application of the relay, please consider the following:

1. For Model A of the SPAJ 144 relay, the Phase Discontinuity unit has been modelled with RelLogip and RelIoc elements. It is settable from 10% to 100% though the relay model shows it is settable from 10A to 100A. In other words, setting this element to 20A, represents a setting of 20%. On the time overcurrent plot, the curve value is again shown in terms of either secondary or primary Amps. This does not matter, the relay functions correctly.
2. The relay model would have required more than 50 dip inputs if this approach was used. As this unit can be used for only up to 32 inputs, an alternative approach has been used for the output logic. By default, all 5 output signals are activated by any of the protection elements. If the user wants to use the relay in a more sophisticated scheme where this scenario would not be correct, he should simply copy the output logic from the relay type model into the element and make changes in output model in the element. This would then replace the logic in the relay element model.
3. The external control input signal can be used to block one or more internal elements. If this is required, some modifications to the relay model may be required. In this relay model the external control signal would block all functions of the relay if activated.
4. Note that the relay must be set in the measuring unit if it is 1 A or a 5 A device.

2. SPAJ 144 Relay Model B

The relay type model contains all elements of the actual relay. However, in the application of the relay, please consider the following:

1. In Model B of the SPAJ 144 relay, the phase discontinuity unit has been modelled with three elements. These are logic (RelLogdip), starter (RelFdetect) and timer (RelTimer) elements respectively. It is settable from 10% to 100% though the relay model shows it is settable from 10A to 100A. In other words, setting this element to say a value of 20 A, represents a setting of 20%. The time overcurrent plot will not show this element as it is set to a percentage unbalance value and not current. This was considered a better approach than to model this functionality with an overcurrent element.
2. The relay model would have required more than 50 dip inputs if this approach was used. As this unit can be used for only up to 32 inputs, an alternative approach has been used for the output logic. By default, all 5 output signals are activated by any of the protection elements. If the user wants to use the relay in a more sophisticated scheme where this scenario would not be correct, he should simply copy the output logic from the relay type model into the element and make changes in output model in the element. This would then replace the logic in the relay element model.
3. The external control input signal can be used to block one or more internal elements. If this is required, some modifications to the relay model may be required. In this relay model the external control signal would block all functions of the relay if activated.
4. Note that the relay must be set in the measuring unit if it is 1 A or a 5 A device.