Siemens RMU trapped key interlock

Recently we supplied an 8DJH with key interlock system. The customer will be using this to allow access to a ripple plant equipment enclosure only when the earth switch connecting power to the plant is in the closed position. The arrangement is that the key can only be removed from the 8DJH earth switch when earth switch is closed, and the earth switch can only be opened when the key is returned. The enclosure will have a matching mechanism that only allows the gate to be opened when the key is used. This mechanical solution is simple to understand and hard to bypass, therefore should be highly effective in reducing the risk of live equipment being accessible.

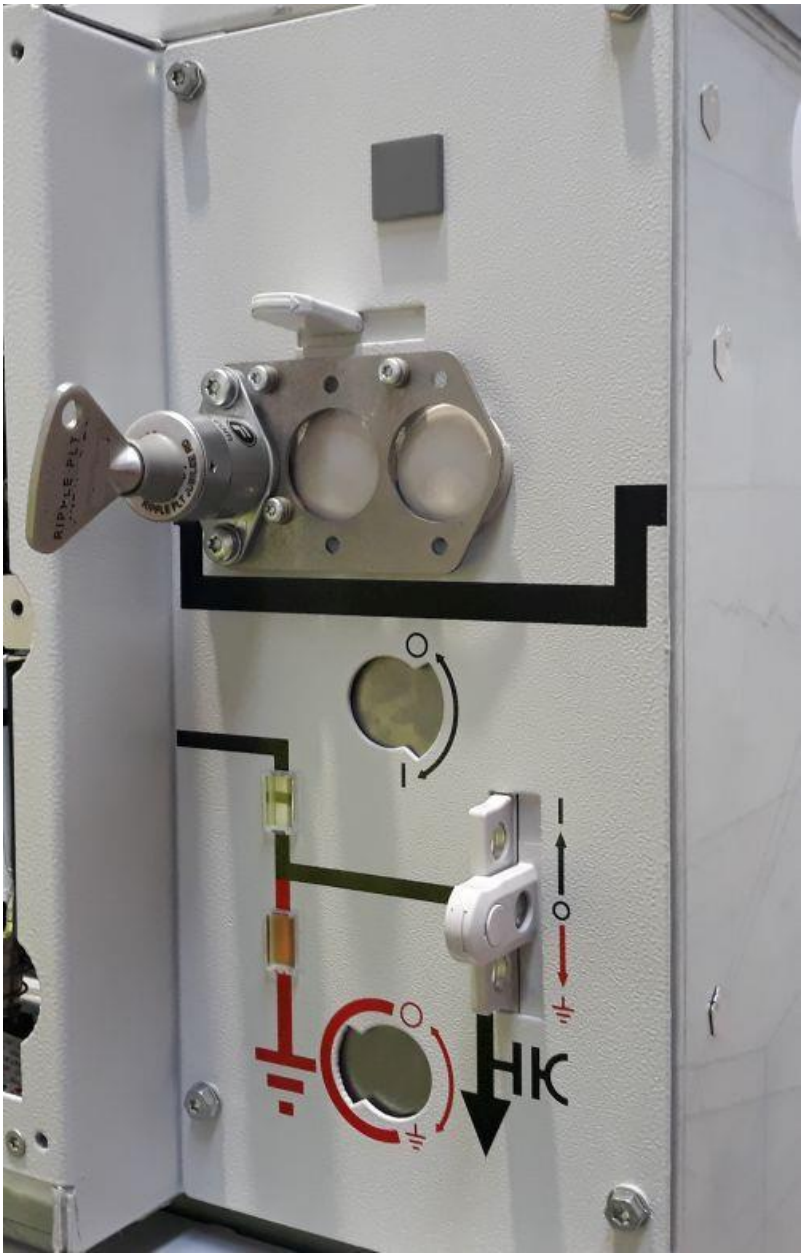

Figure 1. Trapped Key Interlock

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A second example is where interlocking occurs between two separate RMUs.

Figure 2. Trapped Key Interlock example 2

A mechanical interlocking system is fitted to these ring mains to prevent incorrect earthing of the MV cable that connects between panel K02 of RMU 1 and K01 of RMU 2. The Disconnector at one end (of the cable) is interlocked with the Earth-switch at the other end. This is to prevent the remote Earth-Switch from being able to be closed if the local Disconnector is closed (which could earth a live cable). The interlocking also prevents the local Disconnector from being closed if the remote Earth-Switch is closed.

This is achieved by trapped key interlocks:

- The key must be fitted to the Disconnector to allow the Disconnector to be closed
- The key is trapped by the Disconnector when closed (so it cannot be removed to close the remote earth-switch)
- The key can only be released/removed from the Disconnector when the Disconnector is open
- The key must be fitted to the Earth-switch to allow the Earth-switch to be closed
- The key is trapped by the Earth-switch when closed (so it cannot be removed to close the remote disconnector)
- The key can only be released/removed from the Earth-switch when the Earth-switch is open

Note that to allow for situations where power may be supplied by either RMU 1 or RMU 2 (or both) each Disconnector is interlocked with the other end Earth-switch. That is:

- Key K1 – interlocks RMU 1 K02 Disconnector and RMU 2 K01 Earth-switch
- Key K2 – interlocks RMU 2 K01 Disconnector and RMU 1 K02 Earth-switch

There are options for key trapped or key released in a given position for the different switching devices in the Siemens range, including circuit breakers, feeders and bus couplers. The design team at HV Power are always available to work with you to explore options. Please feel free to contact us.

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