SIEMENS

SIPROTEC 5 Application

SIP5-APN-027:
Change of switching authority via function keys

Answers for infrastructure and cities.

SIPROTEC 5 - Application:
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Content:

1 Change of switching authority via function keys

1.1 Introduction

In case SIPROTEC 5 is used for the control of switches, e.g. circuit breakers, the switching elements are usually provided with a switching authority. The switching authority defines, if the control is allowed locally or from remote. The authority can be changed with the key switch on on-site operation panel of the device or via input signals. The key switch in the SIPROTEC 5 family is only available on the on-site operation panels of expansion modules. Therefore all SIPROTEC 5 devices consist of only the 1/3 base module do not have a key switch on board.

The application describes the change of the switching authority by using the function keys of a device.

1.2 Configuration

The configuration is realized that the switching authority will be set to „local" with the function key F4 and „remote"with the function key F5.

Following steps are required:

- Add two new single point indications (SPS) for the routing of the function keys F4 and F5.
- Create a CFC chart to convert the trigger pulse of the function keys into static signals.

1.3 Information routing in DIGSI 5

1. Open the editor „Information routing"in DIGSI 5.

2. Open the function block „general"and add two new single-point indications (SPS). Select the function block "general" with the mouse and open the dialog "Add new signals" with the right mouse button, see figure 1.
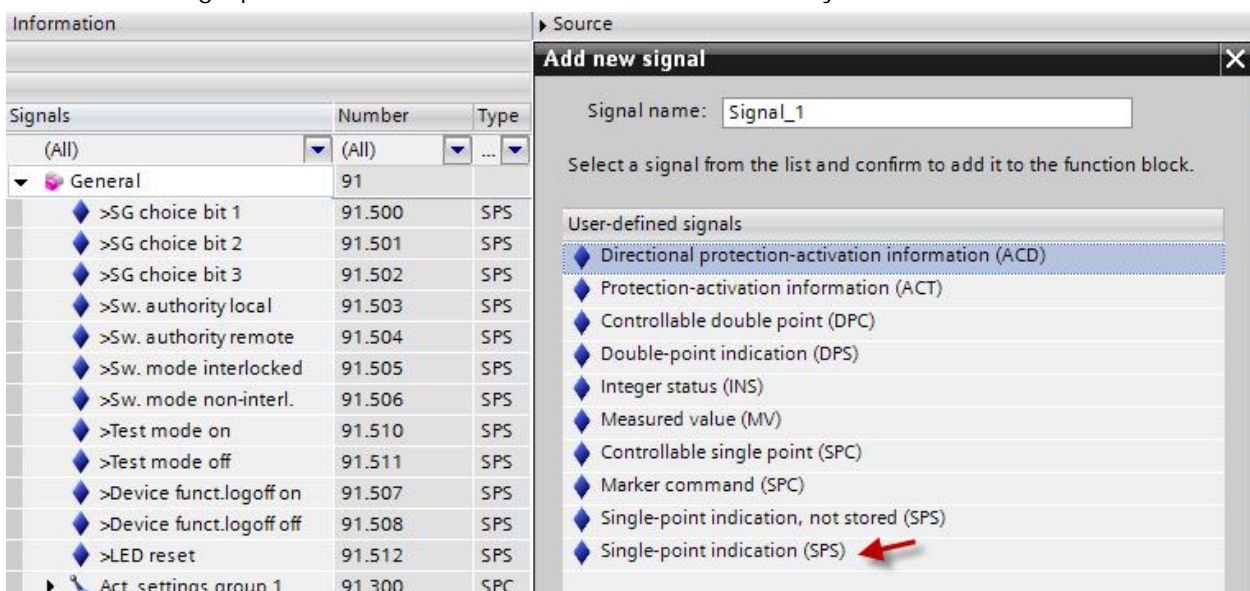   The single point indication will be routed to both function keys.

Figure 1: Function block „general" in the editor „information routing"

3. Unique naming of both single-point indications, e.g. „Sw.auth.local via F4"and „Sw.author.remote via F5".

4. Route the two indications to the related function keys. Select the type P (trigger pulse), see figure 2.

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Figure 2: Routing the new SPS signals to the function keys

5. Open the editor „hardware and protocol and label the function keys in the related device menu. Select the operation panel and the "properties" (see figure 3). Label with the function keys with unique names e.g. „Switch.auth.local" and „Switch.auth. remote".
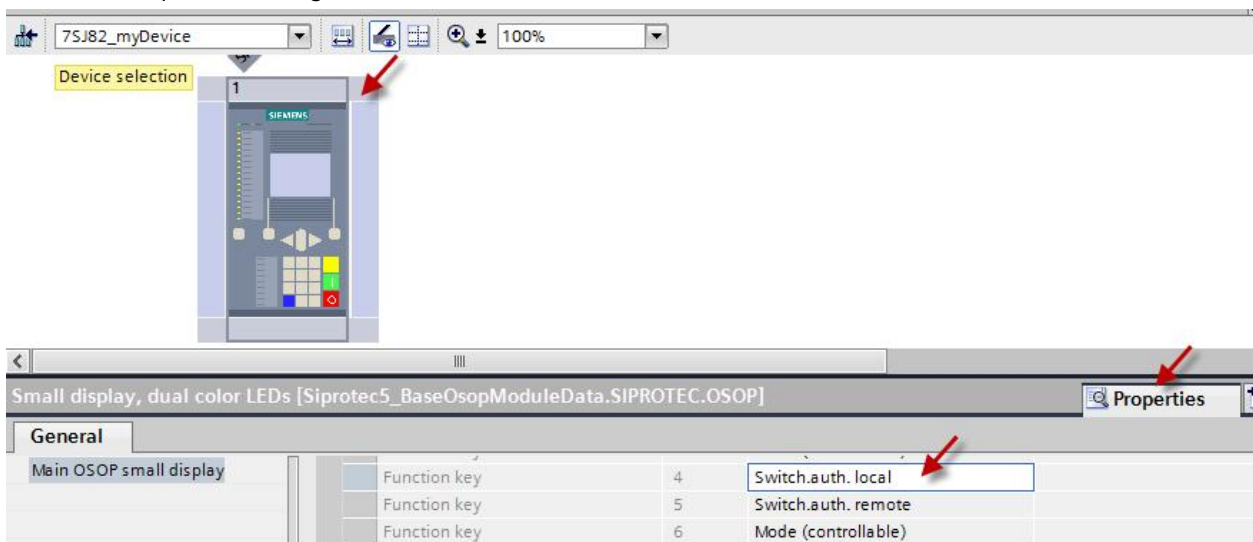

Figure 3: Labeling of function keys

1.4 CFC Plan

Afterwards create a CFC chart to convert the trigger pulse of the function keys into static signals which changes the switching authority.

6. Open the "charts" in the project tree and double click "Add new chart". Name the CFC plan e.g. „Switch.auth.local via F-key". Keep the default task level „Event-triggered".

7. Open the new plan with double click.
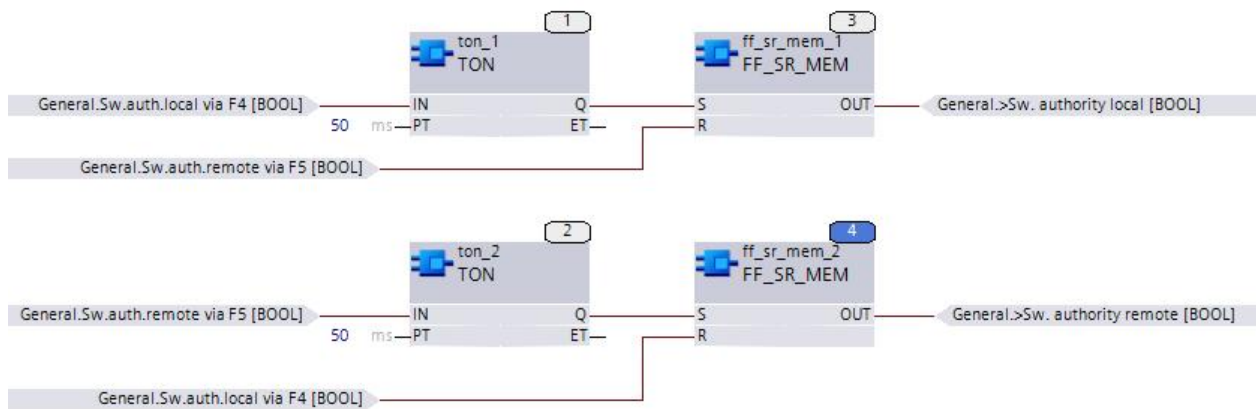
8. Create the CFC plan as shown in figure 4.

Figure 4: CFC chart for the activation of the switching authority with function keys

Explanatory note of the CFC plan:
The Flip-Flop (FF_SR) converts the trigger-pulse of the function keys into a static signal. The "memory function" of the FF secure that the switching authority remains unchanged after a device restart. The TON block delays rising of a binary signal in the millisecond range (Default: 50ms) and secure that the actual switching authority will be reset before the new switching authority will be set.

9. Optional: Change of the confirmation ID in the editor "safety and security" for "settings / operation". The confirmation IED of the "settings / operations" is also valid for the activation of the function keys.
10. Load the configuration into the device.

1.5 Summary

In case SIPROTEC 5 is used for the control of switches, e.g. circuit breakers, the switching elements are usually provided with a switching authority. The switching authority defines, if the control is allowed "local" or "remote".

SIPROTEC 5 devices consist of only the 1/3 base module, the change of the switching authority can be realized with function keys.

The activation of the function keys has the confirmation ID of the „settings / operation". The default confirmation ID is „222222"and can be changed individually.

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