PROTECTION MADE SIMPLE.

Installation of WIC1 g2 R2.1 / R2.2 Hotfix Update as Corrective Action for Service Bulletin CAC_SEG_0170 “Incorrect current measurements on phase C”

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WARNING!	
	During firmware update, the WIC1 does not provide any (protection) functionality. Please ensure this is acceptable considering personal safety and potential equipment damage in case of a fault situation. It may be required to have sufficient backup protection or to take the protected object out of service temporarily. Please make sure to follow all locally applicable national and international standards as well as safety regulations for electrical power installations (e.g. VDE, EN, DIN, IEC).

WARNING!	
	It may be required to temporarily disconnect the WIC1 from all power supply sources (including CTs) to finish the update: After the update, the installer attempts to restart the WIC1 using the new firmware. In very rare cases, the restart may fail and the WIC1 must be restarted manually. To force a restart manually, briefly disconnect all power sources and then reconnect them. This includes the CTs if current is flowing (alternatively, take the protected object out of service temporarily). Please note this behavior never happens during regular operation, but only on the first restart after an update! **Never disconnect the CT wiring or the CT terminal without shortening it first!**

CAUTION!	
	A PC3 adapter must not be used. Only PC4 adapters or DiggiMECs are compatible with WIC1 g2. The power supply of the WIC1 must not be interrupted during the firmware update process. Do not disconnect the USB- and RJ45-connection between the WIC1, PC4 adapter or DiggiMEC and the PC.

CAUTION!	
	Only hardware variants “Backup Protection / Self-Supervision” = “1” (Self-Supervision operates "TC"-Output): Disconnect the “TC”-output wiring before the firmware update. This can be done by removing connector X4. This variant is designed to generate a trip pulse at the “TC”-Output if the regular firmware is not running. During a firmware update process there is no regular firmware running which activates the Backup Protection. Alternatively, the protected object can be taken out-of-service temporarily by opening the breaker.

Introduction

This document describes the Hotfix update process for the WIC1 g2 Firmware versions R2.1 / R2.2 to resolve the issue described in CAC_SEG_0170.

The Hotfix Installer does not delete or change any parameters on the device. Also, it does not affect any of the stored data on the WIC1 (e.g. fault records).

Generally, there are three different methods to update the WIC1. See the detailed description in the corresponding chapters:

1. **Method 1:** PC4 adapter – update WIC1 only

2. **Method 2:** DiggiMEC – update WIC1 only

The Appendix chapter contains FAQ and Troubleshooting.

Method 1: Firmware update WIC1 via PC4 adapter

NOTICE!	
!	It is not permitted to have multiple WIC1 devices connected simultaneously to a PC as this will lead to connection problems with the installer.

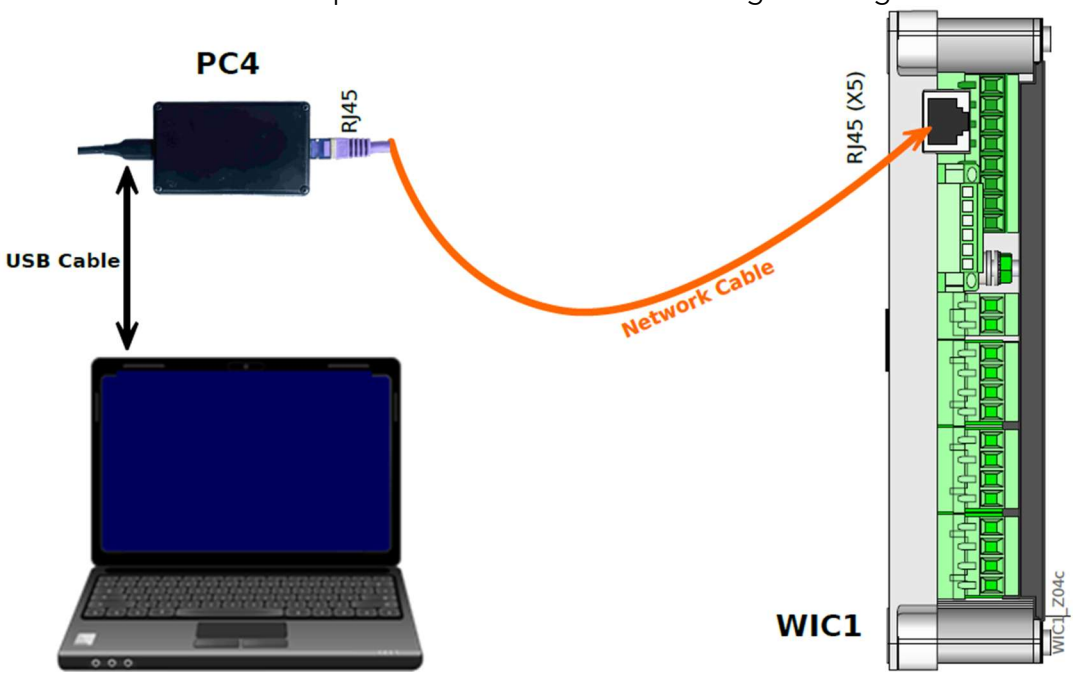
Preparation

To update the firmware of a WIC1 g2 device the following equipment and preparations are necessary:

1. Get the "WI-HotfixInstaller" for R2.x (R2.1 / R2.2). It contains the firmware and will update the WIC1 g2. Please download from https://docs.segelectronics.de/library/wi_line/wic1/Updates/ .
2. A PC4 adapter is required for a connection between WIC1 and a Windows PC (PC3-adapters from the prior WIC1 generation must not be used!)
3. Install the latest Smart view version (mandatory):
   - https://docs.segelectronics.de/library/smart_view/Smart_view_latest_release/
   - Smart view delivers the necessary drivers for the PC4 adapter.
   - Installation requires administrator privileges.
   - Smart view can be used to verify if the device is running properly after the update. Alternatively, a DiggiMEC can be used for verification (WIC1 and DiggiMEC must have matching firmware versions).
4. RJ45-cable for connection between WIC1 and PC4 adapter.
5. USB-C to USB-A cable for connection between PC4 adapter and Windows PC.

Installation of the firmware update

1. Connect the WIC1 with the PC4 adapter to a Windows PC according to the figure below.



2. Start the installer.
3. Select the port which is used for a connection with the PC4 adapter.
4. Start the firmware update of the WIC1 with the button “Check Device”. The WIC1 is automatically set to a special "WIC Service Mode". This mode enables the installer to install the update. As long as the “WIC Service Mode” is active, the red “Error”-LED of the WIC1 lights up permanently.
5. The installer will notify once the update has finished successfully.
6. The installer will try to restart the device automatically. The device is fully operational after the restart. If the restart, however, fails:
   - Disconnect the power supply briefly and then reconnect it to force a restart manually. This includes every power supply source including connected CTs (if a current is flowing). **Never disconnect the CT wiring or the CT terminal without shortening it first!**
7. To verify if the WIC1 is running properly there are two options:
   - Smart view: Connect the WIC1 to the setting Software Smart view. The red “Error”-LED of the WIC1 must be off and it should be possible to read out the parameters from the device.
   - DiggiMEC: Connect the WIC1 to a DiggiMEC with USB power supply. The red “Error”-LED of the WIC1 must be off and it should be possible to navigate through the menu using the keys. WIC1 and DiggiMEC must have matching firmware versions.

Method 2: Firmware update WIC1 via DiggiMEC

NOTICE!	
	It is not permitted to have multiple WIC1 devices connected simultaneously to a PC as this will lead to connection problems with the installer.

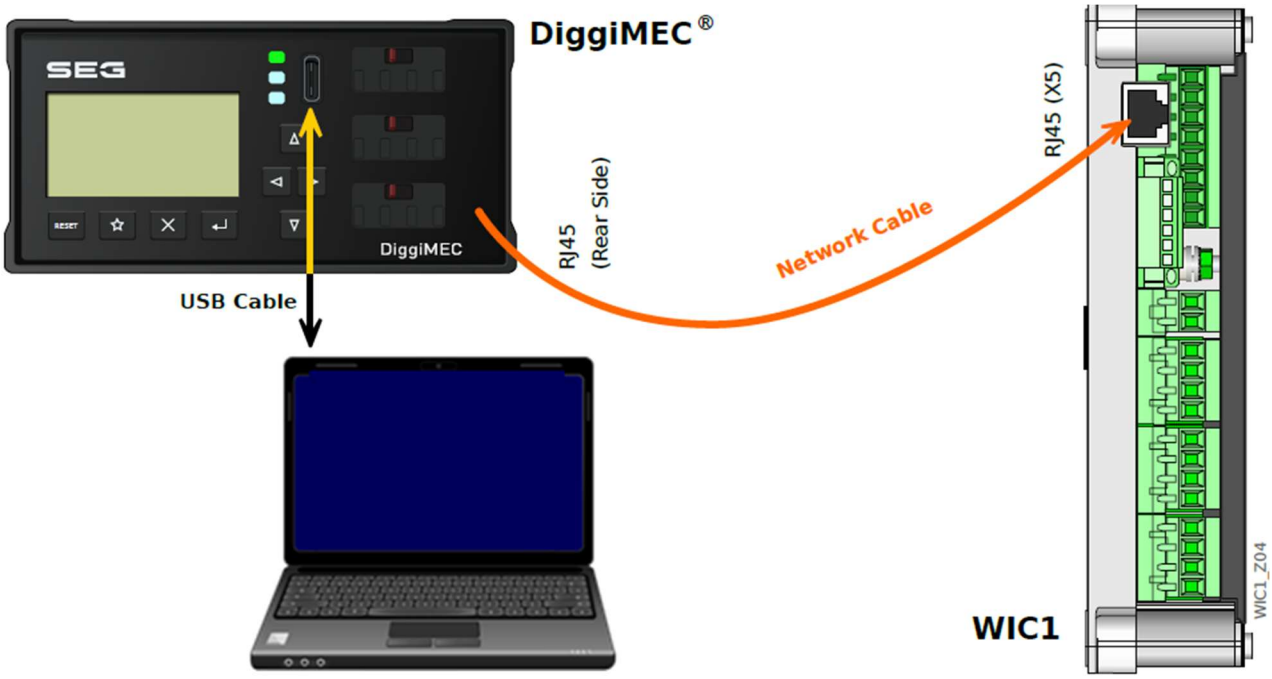
Preparation

To update the firmware of a WIC1 g2 device the following equipment and preparations are necessary:

1. Get the “WI-HotfixInstaller” for R2.x (R2.1 / R2.2). It contains the firmware and will update the WIC1 g2. Please download from https://docs.segelectronics.de/library/wi_line/wic1/Updates/ .
2. A DiggiMEC is required for a connection between the WIC1 and a Windows PC (PC3-adapters from the prior WIC1 generation must not be used!)
3. RJ45-cable for connection between WIC1 and DiggiMEC.
4. USB-C to USB-A cable for connection between DiggiMEC and Windows PC.
5. Install the latest Smart view version (optional):
   - https://docs.segelectronics.de/library/smart_view/Smart_view_latest_release/
   - Installation requires administrator privileges.
   - Smart view can be used to verify if the device is running properly after the update. Alternatively, a DiggiMEC can be used for verification (WIC1 and DiggiMEC must have matching firmware versions).

Installation of the firmware update

1. The WIC1 must be set to a special "WIC Service Mode". As long as the “WIC Service Mode” is active, the red “Error”-LED lights up permanently. The “WIC Service Mode” is entered by pressing and holding the »RESET«-key while powering both the WIC1 and the DiggiMEC* (plugging in the USB cable, the WIC1 must not be supplied before). A dialogue shows up and asks for confirmation to enter the “WIC Service Mode”. The connections between WIC1, DiggiMEC and Windows PC are shown in the figure below.



2. Start the installer.
3. Select the port which is used for a connection with the DiggiMEC.
4. Start the firmware update of the WIC1 with the button “Check Device”.
5. The installer will notify once the update has finished successfully.
8. The installer will restart the WIC1 after the update automatically. The device is fully operational after the restart. If the restart, however, fails:
   - Disconnect the power supply briefly and then reconnect it to force a restart manually. This includes every power supply source including connected CTs (if a current is flowing). We recommend to put the protected object out of service temporarily instead of disconnecting the CTs from the WIC1. **Never disconnect the CT wiring or the CT terminal without shortening it first!**
6. To verify if the WIC1 is running properly there are two options:
   - Smart view: Connect the WIC1 to the setting Software Smart view. The red “Error”-LED of the WIC1 must be off and it should be possible to read out the parameters from the device.
   - DiggiMEC: Connect the WIC1 to a DiggiMEC with USB power supply. The red “Error”-LED of the WIC1 must be off and it should be possible to navigate through the menu using the keys. WIC1 and DiggiMEC must have matching firmware versions.

* If it is not possible to switch the power supply of the WIC1 completely off, the WIC1 can also be restarted via the DiggiMEC or the setting software Smart view. Navigate to “Service” -> “General” -> “User Restart”. Execute the restart (it may be necessary to enter the password) and directly press the »RESET«-key and hold it before the restart has finished.

Appendix

FAQ

1. Are the parameters on the device preserved during the firmware update?
   - Yes, the Hotfix Installer does not delete any device settings or data stored on the device. It will only fix the issue described in CAC_SEG_0170 "Incorrect current measurements on phase C".

2. Are there any other data losses due to a firmware update?
   - No, the Hotfix Installer does not delete any data on the WIC1 (e.g fault records).

3. Does the DiggiMEC also need a firmware update?
   - No, the DiggiMEC does not need a firmware update.

Troubleshooting

1. The connection between the WIC1 and the Windows PC does not work or the installation cannot be started.
   - Please make sure to have the WIC1 properly connected (using a PC4 adapter or a DiggiMEC)
   - Disconnect and reconnect the USB cable as well as any other power supply of the WIC1 to force a restart of the WIC1.
   - DiggiMEC: Make sure that the WIC1 is set to "WIC Service Mode" as explained for method 2 in the corresponding section above.
   - A PC4 adapter requires additional drivers. These are installed with the setting software Smart view.
   - PC3 adapters must not be used.

2. The WIC1 does not start after firmware update:
   - The green "Ready"-LED of the WIC1 only lights up if there is sufficient power supply for a trip pulse. A USB-connection does not deliver enough power in all cases.
   - To verify if the WIC1 is running properly there are two options:
     - Smart view: Connect the WIC1 to the setting Software Smart view. The red "Error"-LED of the WIC1 must be off and it should be possible to read out the parameters from the device.
     - DiggiMEC: Connect the WIC1 to a DiggiMEC with USB power supply. The red "Error"-LED of the WIC1 must be off and it should be possible to navigate through the menu using the keys. WIC1 and DiggiMEC must have matching firmware versions.
   - Please restart the device manually by disconnecting the power supply briefly and then reconnecting it.
     - WIC1-4: Also make sure to remove the auxiliary power supply for a restart.
     - CT powered (if current is flowing): The power supply from the CTs must also be stopped. Take the protected object out of service temporarily. Alternatively, the CT wiring or the CT terminal may be disconnected temporarily. **Never disconnect the CT wiring or the CT terminal without shortening it first!**
   - If the problem persists, please try to execute the firmware update again.

3. The firmware update got interrupted:
   - Check the cable connections.
   - Try to execute the firmware update again.

4. The installer shows the message “No Installation Required – No updates required as the WIC1-xxxxxxxxxx is already on the same version”.
   - The connected WIC1 already has the same firmware version as that provided by the installer. Therefore, no update is necessary.