

Document class	Release Note
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Page	1/6
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## Firmware update release 1.0.4 for REX640 control and protection, including new application version for LHMI

### Scope

This update release 1.0.4 concerns all REX640 protection relays and LHMI's delivered from the factory earlier than 23<sup>rd</sup> of October 2019.

To verify whether the update applies to the protection relay and the LHMI version at hand, there are three things to check:

1. Product Connectivity Level shall be one (PCL1). This information can be checked from LHMI, WHMI or from the product label. The PCL is a part of product composition code, as the example below shows.

REX640B10Nx + xxxx + COMx + PSMx + BIOx + **PCL1**

2. Relay Firmware version is 1.0, 1.01, 1.0.2 or 1.03. This can be checked from LHMI or from WHMI
3. LHMI application version is dated **earlier than** 19-09-10-16:34. This can be checked from LHMI only.

Below figures show how to locate the above-mentioned information from the LHMI Device Information page and from the WHMI Product Identifiers page. The LHMI Device Information page can be accessed by tapping the menu bar on upper part of the LHMI screen and locating the Device Information button from the lower left-hand corner of the screen. The relay Firmware version is referred as "SW version" and the LHMI application version is referred as "HMI version". The "PCL" part of the composition code is pointed out as well.

Date 23.10.2019  
 Page 2/4  
 Subject Firmware update release

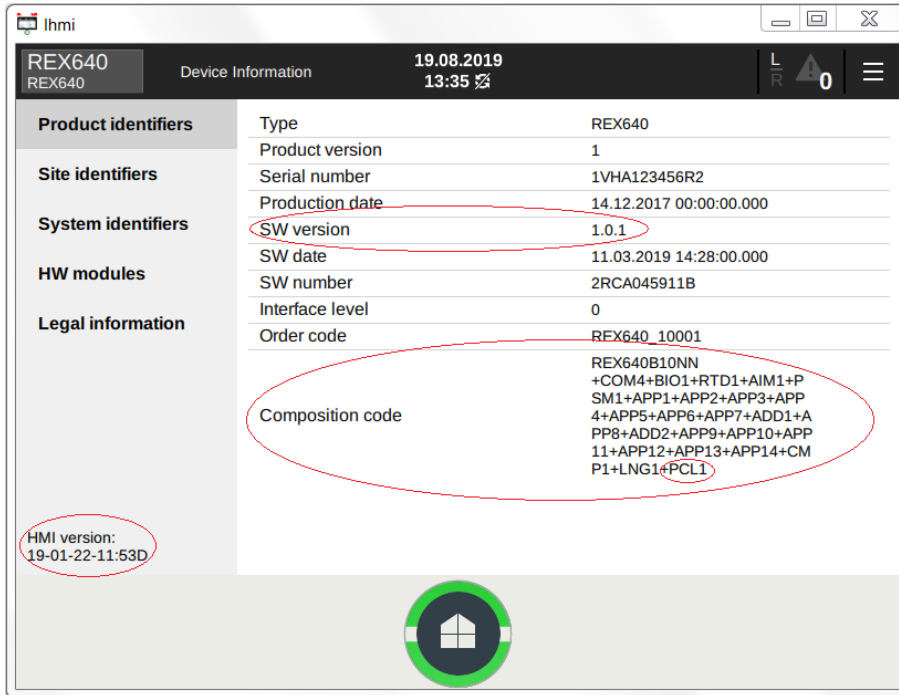


Fig 1. Lhmi Device Information page

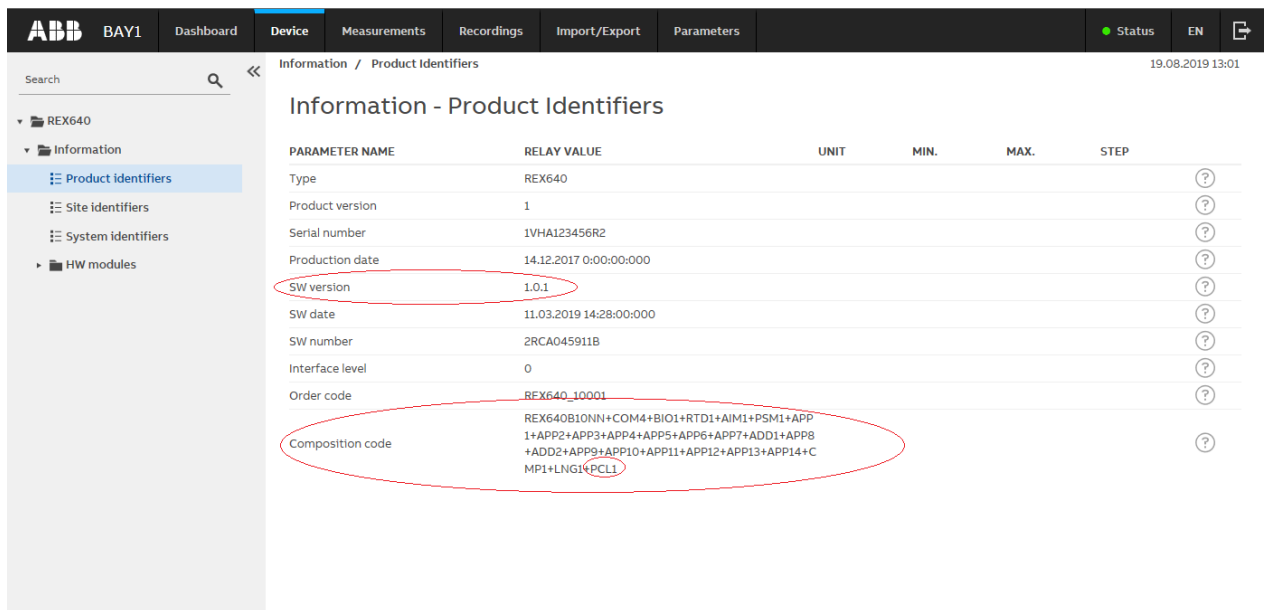


Fig 2. WHMI Product Identifiers page

## Implemented usability improvements

The firmware update release includes usability improvements. The following improvements have been implemented:<sup>1</sup>

### Firmware update release 1.0.4 for relay

#### Protection

- Improvement of line differential protection stability.

### Firmware update release 1.0.3 for relay and LHMI application version dated 19-09-10-16:34

#### Measurement

- Calculated residual voltage scaling on SMV stream receiver side has been corrected.
- Calculated residual voltage scaling on measurement list on LHMI/WHMI as well as for MMS reporting has been corrected.

#### HMI

- "Clear LEDs" function button behaviour on the ready-made virtual alarm LED page in LHMI is improved.
- Improved information on the "Fault Records" page on LHMI in case ANSI naming convention is in use.

### Firmware update release 1.0.2 for relay and LHMI application version dated 19-06-13-16:05

#### Protection

- Improvement of stability during post-fault oscillations in multifrequency admittance-based earthfault protection (MFADPSDE) operating in "Intermittent EF"-mode.

#### Measurement

- Improvement in current measurement summation function (CMSUM) output values in case currents measured with sensors (Rogowski coils) are summated with conventional CT measurements, or with IEC 61850-9-2 LE based measurements.

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<sup>1</sup> The relay firmware update may also include some minor usability improvements not listed in this note.

## Communication

- Improvement in updating capacitor bank unbalance protection CUBPTOC and HCUPTOC functions measurement values reported to the communication link.

## Supervision and Monitored values

- Improvement of alarm handling during relay switch-off and switch-on process. “Power down detected” event is not anymore generating persisting alarm which could be cleared only after a five-minute delay.

## HMI

- A new feature for restoring relay configuration using back-up from the LHMI is now supported. 640 LHMI restores the relay backup file after the existing LHMI and the new replacement relay pairing has been successfully completed. Following conditions must be additionally fulfilled:
  - Replacement relay's serial number is different than in the original relay
  - The replacement relay contains all the same options as the original relay. The replacement relay may contain additional options.
  - User has accepted to run the restore operationThe back-up file is automatically written to the LHMI memory 24 hours after the latest change in the relay's configuration or setting parameter files.
- Improvement LHMI Home-button alarm indication in case virtual alarm LEDs are used instead of event-based alarm list.

## Update procedure

Firmware updates represent an integral part of ABB's life cycle management of distribution protection and control relays. The updates ensure optimized usability throughout the relay's entire life cycle by offering the latest improvements. The ideal time for a firmware update would be during periodical testing or during a maintenance break.

REX640 relays and LHMI's dispatched later than October 23<sup>rd</sup>, 2018 include the stated relay firmware update 1.0.4.

Please note that ABB will not be liable for any direct or indirect costs related to the firmware update procedure. The update procedure shall be performed at the sole responsibility of the possessor of the devices.