



Changelog

EOR-3DS Firmware V 2.1.5

Combined Earth Fault and
Short Circuit Indicator



05/2024
firmware V2.1.6

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1. General

1.1 Content

This document contains version and change information for the different releases of released firmware for the Earth Fault and Short Circuit Indicator EOR-3DS since firmware version V 2.1.1.

The version information is structured in “Innovations and Improvements” and “Bugfixes”. Within this structure there is differentiated between general, locating methods and SCADA.

2. Change information

2.1 Version 2.1.6 from 30.04.2024

Innovations and Improvements

- General
 - New order feature combination C32/U32: same measurement card as C31/U31 but without use of sensor config file
 - IP-forwarding between Ethernet interfaces ETH0 and ETH2 implemented
 - LUA program processing optimized
 - User management: measurements and logbook on device panel possible without login
 - Binary input functions (Reset-commands) added to LCD logbook
- Location methods
 - Optimized qu2 method and additional logs
- SCADA
 - IEC 60870-5-101/103/104, MQTT IoT, DNP3.0: Deviations of measurement and power values changed on realistic values for a 20 kV grid
 - MQTT MAO: firmware update file is loaded and executed in RAM (without usage of SD card)
 - MQTT MAO and IoT: watchdog added
 - MQTT certificates/EST: New additional parameter „Unsecure chain download“
 - DNP3.0 Protokoll: Optimized binary input values
- Factory reset
 - Factory reset incl. customer specific parameters: inkl. kundenspezifischer Parameter: only customer specific parameters are loaded
 - Additional parameter „Reset TCP Users“: Optionally the TCP password for AE-Toolbox can be also resetted or not

Bugfixes

- General
 - Syslog File not emptied after firmware update
 - Occasional red status LED after restart fixed
 - User management: panel user can not perform a reset of the LCD logbook anymore
- SCADA
 - M&O connection interruptions fixed
 - IEC 60870-5-101/103: bug in deviations calculation and queue size fixed

2.2 Version 2.1.5 from 14.08.2023

Bugfixes

- General
 - Hardware features C (current measurement input) and U (voltage measurement input) included in parameter set under setup/commissioning/status page
 - Factory reset inc. customer specific parameters: suppression of the relay control during factory reset
- SCADA
 - Support of the IoT Software Thingsboard
 - Download-Manager for Cumulocity IoT and Thingsboard IoT included
 - PT100 measurement values of SIBushing for IEC 60870-5-104 and IoT included
 - IEC 60870-5-103: after a general query, the measurement values with cause of transmission (COT) are reported as 1:spontaneously (previously 9:general query)
 - Bugfix logbook readout via Cumulocity

2.3 Version 2.1.4 from 18.04.2023

Bugfixes

- General
 - Faulty phases, that were shown incorrectly after transition to voltage free status (UL1 = UL2 = UL3 = 0 V), fixed
- SCADA
 - Permanent connection loss during firmware update via M&O fixed, that was caused by a short connection interruption during firmware file download

2.4 Version 2.1.3 from 03.03.2023

Innovations and Improvements

- General
 - The parameters significance threshold for voltage and current measurement are now visible and not hidden anymore

Bugfixes

- General
 - Calculation of the secondary and primary values for C21/C25/U10 adapters adjusted
 - Standardisation factors (factors between terminal and secondary values) now also part of recorder file

2.5 Version 2.1.2 from 28.02.2023

Innovations and Improvements

- General
 - The parameters knu 0/1/2/3 (VT ratio) are read-only now and are calculated in the device with the parameter "U12" for every voltage measurement input:
 $\text{knu } 1/2/3 = U12 / 100 \text{ V}$ or $\text{knu } 0 = U12 / 100 \text{ V} / \sqrt{3}$
 - The parameter Un terminal 0/1/2/3 defines the nominal value for the secondary voltage of the connected sensor or transformer
 - The parameters kni 0/1/2/3 (CT ratio) are read-only now and are calculated in the device with the parameter "In prim":
 $\text{kni } 0/1/2/3 = \text{In prim } 0/1/2/3 / 1 \text{ A}$
 - The parameter In terminal 0/1/2/3 defines the nominal value for the secondary current of the connected sensor or transformer
 - Indication of the measurements and sequence adjusted: the indication page BA 5..8 can be defined but is skipped on the device because the EOR-3DS has only 4 relays; the indication page PT100 is only displayed with a Siemens measurement card C31/U31
 - Active logbooks are saved on the flash and saved on the SD card in an fixed interval (24h), exceeding the minimal size (>0,5 MB) or during an interruption of the supply voltage
 - For the Siemens measurement card (C31/U31) the parameters "calculate U0" and "calculate I0" are always activated and read-only
 - New default setting for LEDs:
 - green LED for faultless feeder (no arrow on this feeder displayed)
 - red LED for faulty feeder
 - Display pages are deactivated when there are set on "00:OFF"
- SCADA
 - IEC60870-5-103 measurement values of type 4 can be parameterized in the CSV file so that they are transmitted with an general interrogation
- Factory reset
 - The passwords for the panel users and operators have two new parameters to define if they are unchanged after a factory reset. By default, the passwords are set back to 0000 after a factory reset.
 - Depending on the order C and U characteristic the parameters Un terminal 0/1/2/3, In prim 0/1/2/3 and In terminal 0/1/2/3 are set

Bugfixes

- General
 - Current measurement direction for Siemens measurement cards adjusted (rotated by 180° because definition of Siemens SIBushing: P1 directed to conductor and P2 directed to busbar)
 - The secondary and primary values are scaled right in the fault record
 - Behaviour during bursttest improved
- SCADA
 - Default values in the IEC60870-5-103 target.csv file for the following data points are scaled on kV and for that the MAX-value is adjusted:
 - U12_MEA_I_0, U23_MEA_I_0, U31_MEA_I_0

- U12_MEA_II_0, U23_MEA_II_0, U31_MEA_II_0
- MQTT MAO: wrong reconnecting behaviour after a short interrupted connection fixed
- Factory reset
 - At a factory reset all SCADA files (.csv and .xml) and LUA files are deleted and replaced **with** the default files

2.6 Version 2.1.1 from 28.07.2022

Innovations and Improvements

- General
 - Display indication for short circuits and earth faults improved. Active method is displayed
 - The parameters kniV and knuV are by default 1 unlike to the EOR-3D compact. There is no need for “sensor sheets” to set the measurement inputs with the parameters kniV and knuV depending on the ordered C and U characteristic. Furthermore, an amplitude correction can be done with the parameters kniV and knuV.
 - The parameters kniV and knuV and the corresponding parameter correction of angle are read-only for Siemens measurement cards C31/U31. The values are set by a “sensor configuration file” which is uploaded via the files tab.
 - LUA variable can be named
 - Default values for IP address, IP mask and language changed
- Factory reset
 - It is possible to consider customer specific factory reset parameters, so that after a factory reset the device has customer specific parameters and not the default parameters.