

Changelog V 2.08

EOR-1DS

Directional earth fault and short circuit
indicator



04/2025

Firmware V2.08

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1. General

1.1 Content

This document contains information and changes about the released firmware versions for the earth fault and short circuit indicator EOR-1DS since firmware version V 1.21.

2. Change information

2.1 Version 2.08 from 04.04.2025

General

- The parameter display timeout time is only used in case of interrupted power supply (default value 30s, definition range 20..300s). In case the power supply is uninterrupted, the display is switched off always after 20 min automatically, independently from the set display timeout time.
- Voltage detection via LRM input: without calibrated voltage measurement inputs in the status screen of voltage measurement there is not display 'not cal.' permanently, but the current measurement values and 'not cal.' are displayed alternately, to be able to verify the general measurement of the connected voltages also without calibration.
- Frequency measurement: Measurement of frequency optimized, because frequency measurement was based on I1 only before. Now the calculation is based on I1..3 or U1..3, in case no current can be measured.
- Description of relay functions partly not correct ('Back' instead of the function name)

SCADA

- Modbus 'Function 04 (0x04): read input register' for 'SNH registers' added
- Register 113 was read only, now read & write.

2.2 Version 2.06 from 01.08.2024

General

- Rotation direction from the phases is detected and indicated via Modbus
- When the fault indication "Uearth" resets, there are no pixels active on the status page any more
- "Uoff" voltage detection added with settable threshold and indication via Modbus and relays
- Ratio kni for phase current plug on adapter extended from 1200 to 2500

Location Methods

- Short circuit and short circuit to earth added additional parameters for $\gg I / \gg I_e$ for a second current threshold with according response time
- $\sin(\phi)$ procedure implemented with according parameters and indications
- $\cos(\phi)$ procedure implemented with according parameters and indications
- additional non-directional $\cos(\phi)$ indication for inaccurate measurement (\geq cl. 1)
- qu2 location method: Ice min settable with up to two decimal digits

SCADA

- Extension of the SNH registers for current values
- New Modbus registers for the added parameters
- Electrical energy counters for apparent, active and reactive energy with calculation of $\cos(\phi)$ for every phase and Modbus register to reset the energy counters added

2.3 Version 1.25 from 16.08.2023

General

- Phase selection for the earth fault test in the menu added
- Comtrade pre- and post-trigger are available in the menu. Hereby the Comtrades can be defined shorter, to get a prompt display indication.
- Status page zero system values also visible with disabled voltage measurement
- Measurement precision for C21/C25 adapter optimized
- NC or NO option for every relay added in the menu (default value NO)
- Configuration files are saved with a number (0..9: EOR-1DS.cfg .. EOR-1DS.cf9) and can be loaded accordingly
- Bugfix at saving of configuration file regarding relay 3 and 4
- Bugfix at loading of configuration file in case the voltage measurement is U10 in the configuration file and LRM in the current setting of the device
- Relay indication in permanent mode independent from saving of Comtrade files
- Bugfix factory reset regarding low power sensor parameters
- Undirected short circuit and earth fault test with activated voltage measurement
- Demo mode added with simulated measurement values and permanent activated display
- The logs were extended with a daily entry and an entry for every reboot after a firmware update or device restart. The reason for the reboot is included in the log entry.

Location Methods

- Directional indication for short circuit to earth adjusted (direction adjusted)

SCADA

- Modbus indications transmitted while saving a Comtrade added. However, commands, e.g. changing parameters, are not possible while saving a Comtrade expect the reset command (register 204).
- New Modbus registers for the maximum short circuit current of each phase
- New Modbus registers for the added parameters
- Extension of the SNH registers for voltage and power values

2.4 Version 1.22 from 21.09.2022

General

- Optimized relay control in HW 19 (downgrade to FW <V1.22 blocked)
- Default parameter edited
- Optimized power consumption in capacitor operation (without power supply)
- Short circuit to earth available in Comtrade
- Device name changed from EOR-1D to EOR-1DS in Comtrade

SCADA

- Modbus register mapping "SNH" corrected to version "SNH 1.7"

2.5 Version 1.21 from 01.08.2022 (comp. to EOR-1D Version 42)

General

- New additional relays 3&4 parameterizable
- Relay 1 as status / life contact useable
- Parameters “battery alert” and “battery reset” are removed due to the application of a long life capacitor
- New parameters “display configuration”
 - OLED time out
 - Brightness
- Power values P, Q and S are indicated on the display and MODBUS
- New parameter I/O configuration for sum current
 - Selection between calculated or measured
- New parameter I/O configuration for phase current
 - SR55
 - Clip on CT with entering transformer ratio
 - Low power with entering the primary and secondary voltage
- New parameter I/O configuration for voltage input
 - LRM
 - Low power with entering the primary and secondary voltage
 - U10 with entering transformer ratio
- Supporting an additional blinking lamp with directional indication (BL7)

Location Methods

- New location method short circuit to earth with following parameters
 - Trip current
 - Response delay
 - Reset time
- I0 measurement supported (for transient detection and short circuit to earth)
- Fixed defined angles for directional indication short circuit/ short circuit to earth
- Angle definition changed to $\varphi = \varphi_U - \varphi_I$ (comparable to EOR-3DS)

SCADA

- New isolated Modbus driver module: “auto on/off” replaced with “delayed off” with settable delayed off time in case of permanently interrupted supply voltage
- Register for displaying the power values implemented (standard register 260..289)
- Extension of the register for relays 3+4 (standard register 452/470..476)
- Adjustment of the status register (standard register 203) for the new functions
- Extension of the register for short circuit to earth (standard register 2/10/203/228)