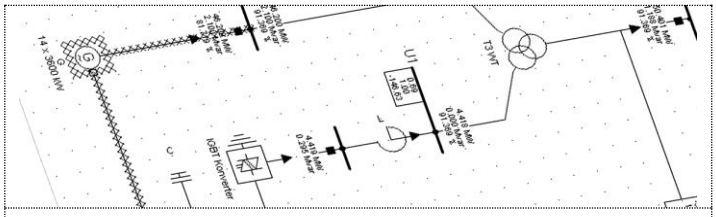

**DIgSILENT Technical Documentation**

# Reyrolle Argus M
# Power Factory
# Relay model description

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# 1 Model general description

Two different version of the Reyrolle Argus M relay are supported: the 7SR22 and the 7SR21 model.

- The 7SR22 model has been implemented using the information available for the "2435H80005 3d-3" software version.

The relay model structure consists of three sub-relays:

1. Overcurrent
2. Voltage
3. Frequency

- The 7SR21 model consists of a subset of the overcurrent elements available in the 7SR22 model. Only the "Overcurrent" sub-relay is present.

## 1.1 Overcurrent

The 7SR22 "Overcurrent" sub-relay support the following protection features:

- 4 Phase overcurrent time dependent elements (51-1, 51-2, 51-3, 51-4)
- 4 Phase overcurrent time defined elements (50-1, 50-2, 50-3, 50-4)
- 4 Ground derived overcurrent time dependent elements (51G-1, 51G-2, 51G-3, 51G-4)
- 4 Ground derived overcurrent time defined elements (50G-1, 50G-2, 50G-3, 50G-4)
- 4 Ground measured overcurrent time dependent elements (51N-1, 51N-2, 51N-3, 51N-4)
- 4 Ground measured overcurrent time defined elements (50N-1, 50N-2, 50N-3, 50N-4)
- 4 Sensitive earth fault time dependent elements (51SEF-1, 51SEF-2, 51SEF-3, 51SEF-4)
- 4 Sensitive earth fault time defined elements (50SEF-1, 50SEF-2, 50SEF-3, 50SEF-4)
- Restricted earth fault element (64H)
- 2 NPS overcurrent elements (46IT, 46DT)
- 2 Undercurrent elements (37-1, 37-2)
- Thermal image element (49)

The 7SR21 "Overcurrent" sub-relay support the following protection features:

- 2 Phase overcurrent time dependent elements (51-1, 51-2)
- 2 Phase overcurrent time defined elements (50-1, 50-2)
- 2 Ground derived overcurrent time dependent elements (51G-1, 51G-2)
- 2 Ground derived overcurrent time defined elements (50G-1, 50G-2)
- 2 Ground measured overcurrent time dependent elements (51N-1, 51N-2)
- 2 Ground measured overcurrent time defined elements (50N-1, 50N-2)
- 2 Sensitive earth fault time dependent elements (51SEF-1, 51SEF-2)
- 2 Sensitive earth fault time defined elements (50SEF-1, 50SEF-2)
- Restricted earth fault element (64H)
- 2 NPS overcurrent elements (46IT, 46DT)
- 2 Undercurrent elements (37-1, 37-2)
- Thermal image element (49)

## 1.2 Voltage

The "Voltage" sub-relay support the following protection features:

- 4 Phase-Phase overvoltage elements (59-1PP, 59-2PP, 59-3PP, 59-4PP). Each of them must be used when the "Voltage Input Mode " is "Ph-Ph" and the "Operation" setting of the relevant voltage element in the relay is "Over".
- 4 Phase-Phase undervoltage elements (27-1PP, 27-2PP, 27-3PP, 27-4PP). Each of them must be used when the "Voltage Input Mode " is "Ph-Ph" and the "Operation" setting of the relevant voltage element in the relay is "Under".
- 4 Phase-Ground overvoltage elements (59-1PE, 59-2PE, 59-3PE, 59-4PE). Each of them must be used when the "Voltage Input Mode " is "Ph-Ph" and the "Operation" setting of the relevant voltage element in the relay is "Over".
- 4 Phase-Ground undervoltage elements (27-1PE, 27-2PE, 27-3PE, 27-4PE). Each of them must be used when the "Voltage Input Mode " is "Ph-N" and the "Operation" setting of the relevant voltage element in the relay is "Under".
- A 27/59 U/V Guard setting element
- 2 NPS Overvoltage elements (47-1, 47-2)
- 2 Neutral Overvoltage elements (59NIT, 59NDT)

## 1.3 Frequency

The "Frequency" sub-relay support the following protection features:

- Frequency elements (81-1,81-2,81-3,81-4,81-5,81-6)
- A 81 U/V guard setting element

# 2 Relay not supported features

The following features are not supported:

- Voltage elements user selectable hysteresis
- Frequency elements user selectable hysteresis
- Cold Load elements
- 50/51 phase elements "2-out-of-3 Logic"
- Voltage controlled O/C (51V)
- Broken conductor/Load imbalance
- In rush detector