



## **GENERAL CHARACTERISTIC**

Protection device of type CZAZ-RL is dedicated to protect HV lines operating in power system of solidly earthed neautral point. Digital technology ensures high level of accuracy, reliability and dependability.

## **Protection set**

- 21/21N Distance protection
  - poligonal, 5-zones
    - independend directional detection system with voltage memory
       ground faults detection system (ground overcurrent with phase
  - currents restrain)
  - voltage transformers failure detection
  - cooperation with AR automation and telecontrol channel
- 67N Against ground faults, directional, definite-time, two-stages or inverse time
- 51 Overcurrent, definite-time, two-stages or inverse time
- 27 Undervoltage
- 46 Current unbalance
- 47 Voltage unbalance
- 11 Against switch onto fault

## Main features

- 9 measuring inputs (phase currents and voltages, residual current, residual current of parallel line, voltage of the other side of CB)
- 20 binary inputs
- 3 TRIP purposes relay outputs allowing to direct connectrion with CB coils
- 16 programmable relay outputs
- 6 relay outputs for signalling purposes: supply module failure, device failure, distance protection pick-up, auto-reclose function activation, coupling signal and unlblock of close command by synchronism check function
- Auto-Reclose automation (79)
  - single AR, three-phase with synchronism check
    - AR activation: internal (by distance protection or ground fault protection) or external (by backup protection or communication channel)
- Synchronism check function (25)
  - Cooperation with telecontrol channel
    - conditionally (synchronous or blocking)
       unconditionally (definite trip or in AR cycle)
- Fault locator function (21FL)
- Electrical values measuring (phase currents and voltages, symmetrical components of currents and voltages, residual current of parallel line, reference voltage for synchrocheck, current unbalance, voltage unbalance, active and reactive power, phase shift between voltages on open CB)
- Disturbance recorder (sampling frequency 1800 Hz)
- registering 15 analog signals and 88 binary signals
- Duration of recorded waveform up to 250s for one channel (approx. 10s for recording all 15 channels and 88 binary signals
- Memory of 15 recording files
- Recording of measured and calculated values

- Event recorder (capacity of 500 events, 100 unique events, time resolution 1ms)
- Optical indication on front panel by:
  - 3 LED diodes signaling: distance protection pick-up, trip, device failure
  - messages about current line status and protection functions statuses displayed on alphanumeric display (20 unique parameters)
  - messages about disturbance on display (22 unique parameters, time of disturbance and fault location)
- Self test and self control system
- Screwless terminals for measuring inputs, pluggable terminals for other circuits
- Autonomic communication by local Human Machine Interface
- Remote communication with PC computer or supervising system. Available communication protocols: MODBUS ASCII/RTU or MODBUS TCP/IP, IEC 60870-5-103

## **TECHNICAL DATA**

Rated current In Rated voltage Un Rated frequency fn Auxilliary voltage Up Burden of measuring inputs Burden of auxilliary voltage supply Continuous thermal withstand of current inputs 1 sec thermal withstand of current inputs Dynamic withstand of current inputs (10 ms) Continuous voltage withstand of voltage inputs 10 sec voltage withstand of voltage inputs Relay outputs data:	1A, 5A 100V, 110V, 125V 50Hz 110220V DC ≤0,5VA ≤55W 2,2 In 80 In 200 In 1,2 Un 1,5 Un
Trip purposes relays:	
Continuous contact carry	8A
Max. breaking capacity – $L/R \le 40$ ms	3A
(by U=250V DC/AC)	
Other relays:	
Continuous contact carry	5 A
Max. breaking capacity by U=250V DC	
<ul> <li>resistive load</li> </ul>	0,3A
– inductive load L/R ≤ 40 ms	0,12A
Max. breaking capacity by U=250V, 50Hz	
<ul> <li>– inductive load, cosφ=0,4</li> </ul>	3A
Ambient temperature	-540 °C
Relative humidity (with no condensation)	≤80%
Ingress Protection:	
CŽAZ-RL/D	IP40
CZAZ-RL/C	IP20
Weight	12kg
Dimensions (height x width x depth)	0
CZAZ-RL/D – surface mounting	285,2 x 288 x 284mm
CZAZ-RL/C – rack 6U. 19" mounting	265.9 x 482.6 x 262mm
Electromagnetic compatibility acc. to	EN 50263
Insulation according to	EN 60255-5
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