

DESCRIPTION

Protection and anti-emergency automation systems are the key factors in uninterruptible and secure provisioning of electrical power supply. The company Iskra is a traditional producer of teleprotection and anti-emergency automation equipment providing a secure and dependable communication channel for transmission of command signals and thus enable rapid and selective detection and isolation of faults in the electro-energetic system and increase reliability of the power system in fault conditions.

Channel coding and adaptive command detection algorithms guarantee optimal combinations of transmission time, security and dependability in current transmission conditions.

Users can easily adapt the DZ9 RZPA device to the project needs due to its complete configurability, modularity and user-friendly design.

DZ9 RZPA OPERATING MODES

DZ9 RZPA device enables transmission of the following operation modes over analog line interface:

- Mode 4RZ+18PA: up to 4 independent teleprotection commands (RZ commands) with highest priority transmitted simultaneously in any combination of commands plus up to 18 anti-emergency automation commands (PA commands) of lower priority transmitted sequentially according to the PA command number considering that commands with a lower number have a higher priority,
- Mode 22PA: up to 22 PA commands transmitted sequentially according to the PA command number considering that commands with a lower number have a higher priority

DZ9 RZPA transmits RZ and PA commands in dual tone mode - each command is transmitted with two frequency carriers in parallel. Analog channel with frequency range from 300 – 3.720 Hz is required for transmission of command and guard signal tones.

MAIN FEATURES

- Universal power supply unit covering input voltage from 42 V DC to 264 V DC and from 82 V AC to 264 V AC
- Hot swappable optional auxiliary power supply module
- Optional redundant communication channel
- Fast command transit functionality
- Multi-point command transmission
- Channel identification that prevents network switching errors
- Optional signaling front panel displaying command counters and main device control signals
- Synchronization with an external GPS (PPS, IRIG-B, SNTP)
- Management and supervision via LAN/WAN or RS232 connection
- SNMP traps with alarm and device information for serving a communication NMS

IMPLEMENTATION

- Point-to-point connection scheme with one line unit; basic and low-price solution
- Point-to-point connection scheme with two line units; redundancy of the line unit and communication path
- T point connection scheme; commands transit functionality optimizes the number of DZ9 devices in teleprotection system
- Δ point connection scheme; three-point connection which leads to optimal transmission times and a high level of redundancy

SPARK ENERGY



DZ9 RZPA Equipment

FRONT PANELS

On DZ9 RZPA can be installed two types of front panel:

- FPU universal front panel with ON/OFF button, RESET button, DB-9 connection for serial connection of the device with a computer and basic visual signalling for system part of the DZ9 RZPA device,
- FPDZ front panel which have in addition to the FPU panel also command counters and visual signaling for line interfaces, command interfaces and test command transmission.

FPDZ front panel mode of operation:

- Command counters show number of transmitted and received commands for 8 transmitted and received commands,
- Visual signalling for command interfaces covers 4 installed CSR units for transmission of 8 commands,
- With select button it is possible to switch command counters and visual signalling for command interfaces to display commands 1-8, 9-16 or 17-22 and associated CSR units.

MANAGEMENT AND SUPERVISION SYSTEM

- PEGASUS RZPA software for management and supervision of local DZ9 RZPA device or remote DZ9 RZPA device via internal service channel
- Equipment status indicated by front panel LEDs and command counters

TECHNICAL DATA

LINE INTERFACES

- Analog line interface, 4-wire duplex transmission, 300 Hz – 3720 Hz, screw plug connector

COMMANDS

- Two operation modes:

- 4RZ+18PA
- 22PA

- RZ command type:

- blocking
- permissive
- direct

- PA command type:

- permissive

- Nominal transmission time:

- < 10 ms (fast REED relays on command output enabled)
- < 20 ms (fast REED relays on command output disabled)

INPUTS/OUTPUTS ON COMMAND INTERFACE (CSR UNIT)

- 2 command inputs
- 4 programmable command relay outputs
- 2 utility relay outputs (alarm, signalization)

USER COMMUNICATION INTERFACES

- RS-232 serial communication interface on the DZ9 device front panel (use of the PEGASUS RZPA user interface software)
- Ethernet interface with a RJ-45 connector on the CSM unit (use of the PEGASUS RZPA user interface software, SNMP remote management for connectivity to NMS)

STANDARDS

- IEC 60834-1
- EN 60255-26 (EMC)
- EN 60950-1 (LVD)
- IEC 60721
- RoHS compliant

OPERATING CONDITIONS

- Storage (temperature/humidity) -40 °C to + 70 °C / ≤ 100 %
- Operation (temperature/humidity) -5 °C to + 55 °C / ≤ 95 %

POWER SUPPLY

- PS48/60 power supply unit (input voltage from 41 V DC to 72 V DC)
- PS power supply unit (input voltage from 42 V DC to 264 V DC and from 82 V AC to 264 V AC)

MECHANICAL SYSTEM

- 19" 3 HE rack plus 1 HE mounting rail for cables fastening and cables shield earthing
- Dimensions (W, H, D) / weight: (482,6 x 177,8 x 296,3) mm / max. 9 kg



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