

SPRECON[®]-E-C-FLS

Frequency-based Load Shedding

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With frequency-based load shedding, consumers can be automatically disconnected from the power network on the occurrence of frequency reduction.

This function avoids network splitting as well as switching-off power plant units. Hence, the existing power network can be sustained.

The necessary supply security of the consumers defines the priority and the frequency allocation regarding the feeders that have to be tripped.

BASIC FUNCTIONS

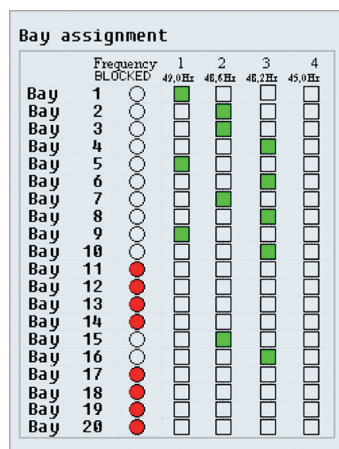
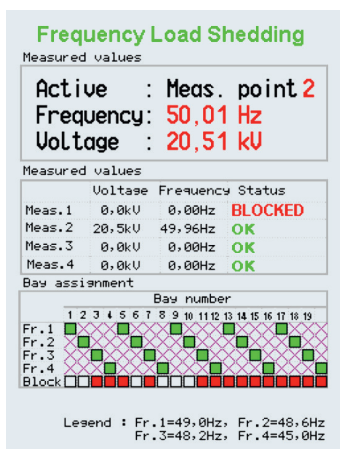
- Command output with multi-stage monitoring or distribution via GOOSE
- Fault and alarm signal acquisition with signal preprocessing (signal debouncing, chatter and signal suppression)
- Communication with station computers (IEC 60870-5-104)
- Communication with higher level gateways (IEC 60870-5-104)

SPRECON-E-C-FLS detects the frequency of three feeders (transformers A, B and reserve) at an accuracy of 5 mHz.

The frequency is calculated by configurable algorithms. SPRECON-E-C-FLS allows specific settings in order to avoid false tripping caused by protection events or system transfer.

Selected feeders are disconnected when the measured frequency drops below the limit value for a longer time than the predefined delay.

On reclosure, which has to be triggered manually, all bays that are assigned to a certain frequency can be connected simultaneously or disconnected with a single command.



TECHNICAL DATA (EXCERPT)

SCOPE OF PERFORMANCE

- Resolution for $f_{rated} \pm 5$ Hz: 1 mHz
- Accuracy for $f_{rated} \pm 5$ Hz: 5 mHz
- Voltage measurement: < 1 %
- Frequency calculation (current value)
Calculation: < 10 ms
Cyclically available after: 60 ms
Calculation periods: 6
- Response limit: 10 mHz
Hysteresis: > 10 mHz
Release value: < 30 mHz
- Monitoring of up to 4 limit values
- Maximum number of inputs/outputs per slot
 - up to 20 wide-range binary inputs
24 to 220 V DC and 110 to 230 V AC / 50/60 Hz
 - up to 20 command outputs 250 V AC/ DC
 - up to 8 CTVT inputs
 - 50 V to 130 V
 - 50 Hz
- Power supply
 - 24 to 60 V DC or 110 to 250 V DC and 110 to 230 V AC / 50/60 Hz

COMMUNICATION PROTOCOLS

- IEC 60870-5-101/-104
- IEC 61850 (GOOSE)

COMMUNICATION INTERFACES

- LAN
 - 2/3 x Ethernet 10/100 Mbit/s (RJ45) or
 - Ethernet switch for optical ring
2 x opt. (BFOC) and 1 electr. (RJ45)
- RS232
- RS422/485
- Fibre-optic

TESTS

- Acc. EN 55022, IEC 60255, IEC 61010, IEC 60870-2, IEC 61000-4, IEC 61000-6, CE designation

ENVIRONMENTAL CONDITIONS

- Recommended temp.: -5 to +55 °C
- Limits: -25 to +70 °C (on request)

HMI CONTROL PANEL

- Mountable attached or detached
- Full-graphical colour display (high resolution)
- 25 individually configurable LEDs (red, green, orange)
- Expandable up to two alarm panels

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