

NPF915

Feeder protection IED



The optimal management of electrical power systems is based in particular on the reliability, availability and communication skills of protection, measurement and automation devices.

The NPF915 offers a modular feeder protection and control solution for applications requiring both current and voltage based protections along with complete measurements. Optional cards (I/O, communication...) are available for more comprehensive monitoring and control applications.

The NPF915 communicates using various protocols including IEC 61850 substation communication standard.



- Double busbar control
- Directional and voltage protection
- Cable end differential protection
- Low-impedance REF protection
- Harmonics protection and control
- 5-shot scheme controlled autorecloser
- Energy and Power measurement accuracy better than Class 0.5 S

ANSI CODES

50/51	50N /51N	67	67N	67NT	50H/51H /68H	46/46R /46L	87N	49F	59
27	59N	47/27P /59NP	81O/81U	81R	51V	78	32/37 /32R	50BF /52BF	99
21FL	60	74TC	25	79	79N	68	86		

OUR TRADEMARKS



CHARACTERISTICS

Protection functions

- Three-phase overcurrent, 4 stages INST, DT or IDMT [50/51]
- Earth-fault (sensitive), 4 stages INST, DT or IDMT [50N/51N]
- Directional overcurrent, 4 stages INST, DT or IDMT [67]
- Directional earth-fault, 4 stages INST, DT or IDMT [67N]
- Intermittent earth fault [67NT]
- Harmonic overcurrent, 4 stages INST, DT or IDMT [50H/51H/68H]
- Current unbalance, 4 stages INST, DT or IDMT [46/46R/46L]
- Low impedance restricted earth fault / cable end differential [87N]
- Cable thermal protection [49F]
- Overvoltage, 4 stages INST, DT or IDMT [59]
- Undervoltage, 4 stages INST, DT or IDMT [27]
- Zero sequence overvoltage, 4 stages INST, DT or IDMT [59N]
- Positive sequence under/overvoltage, negative sequence overvoltage, 4 stages INST, DT or IDMT [47/27P/59NP]
- Over/under frequency, 8 stages INST or DT [810/81U]
- Rate of change of frequency, 8 stages INST or DT or IDMT [81R]
- Voltage restrained overcurrent [51V]
- Vector jump [78]
- Over/Under/Reverse power [32/37/32R]
- Breaker failure protection [50BF/52BF]
- Programmable functions [99]
- Arc protection (option) [50Arc/50NArc]

Measuring and monitoring

- Phase and residual currents (IL1, IL2, IL3, I01, I02)
- Voltage measurements (UL1-UL3, U12-U31, U0, SS)
- Fault locator [21FL]
- Current and voltage harmonics (up to 31st)
- Current THD
- Frequency (f)
- Power (P, Q, S, pf)
- Energy (E+, E-, Eq+, Eq-)
- Circuit breaker wear (CBW)
- Disturbance recorder: from 400 Hz to 3.2 kHz (8 to 64 samples per cycle)
- Current transformer supervision (CTS)
- Fuse failure (VTS)
- Trip circuit supervision [74TC]

Control

- Controllable objects: 5
- Synchrocheck [25]
- Autorecloser [79]
- Zero sequence recloser [79N]
- Cold-load pick-up block [68]
- Switch onto fault logic
- Lock out relay [86]
- 8 setting groups

Hardware

- Current inputs: 5
- Voltage inputs: 4
- Digital inputs: 2 or 3 (standard)
- Output relays: 5+1 (standard)

Options (3 slots)

- Digital inputs optional: +8 per card
- Digital outputs optional: +5 per card (2 cards max.)
- Arc protection (12 sensors +2xHSO +BI)
- RTD inputs: +8 per card
- mA analog measures (1 input + 4 outputs)
- Communication medias (specified below)

Event recording

- Non-volatile disturbance records: 100
- Non-volatile event records: 10,000

Communication medias

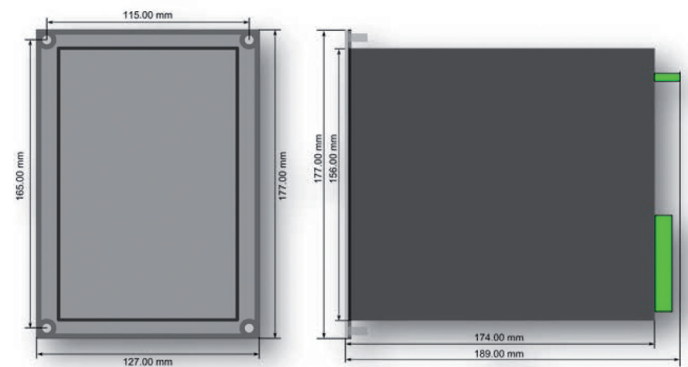
- RJ45 Ethernet 100Mb (rear port) + RS485
- Double LC fibre Ethernet 100Mb HSR/PRP (rear port)
- Double Ethernet RJ45 – 100Mb HSR/PRP (rear port)
- RS232 + serial fibre PP/PG/GP/GG (option)
- Double RJ45 Ethernet 100Mb (rear port)
- Double ST fibre Ethernet 100Mb (rear port)

Communication protocols standard

- IEC 61850 (including HSR & PRP)
- IEC 60870-5-103/101/104
- Modbus RTU, Modbus TCP/IP
- DNP 3.0, DNP 3.0 over TCP/IP
- SPA

Case (dimensions without protection gasket)

- H, W, D without terminal 177x127x174 mm
- H, W, D with terminal 177x127x189 mm (casing height 4U, width ¼ rack, depth 210 mm)
- H, W of front plate 177x127 mm
- H, W of cut out 160x106 mm
- Removable protection gasket width 3 mm



SMART9 - integrated software

Our user friendly SMART9 (Setting, Measurement, Analysis, Recording, Time-saving) configuration software helps the user get the best from NP900 series relays (connection from RJ45 Ethernet 100Mb front and rear port).

