



NETWORK ANALYSER

AS-3energia

The AS-3energia is a two-quadrantal watt-hour meter with network parameters analysis feature. It is used for measuring of basic parameters of electric network, recording of selected parameters overrides and for continuous recording of loads, voltages and currents. It allows cheap measuring even on single end-loads. It replaces existing analog meters and provides detailed control of selected parameters determining the quality of energy..

AS-3energia analysers are vital control/measurement elements of Power Supply Quality Management Systems.

APPLICATION

- measurement and quality analysis at selected checkpoints in LV, MV and HV energy networks
- remote supervision of qualitative and quantitative parameters of a network
- power consumption control and costs simulation compliant with tariff slots
- optimisation of continuous power level
- loads history registration

MEASURED PARAMETERS

- line-to-neutral and line-to-line voltages; voltage asymmetry
- phase currents; calculation of neutral line current
- cosine and tangent for each phase and for three phases
- frequency
- powers (active, reactive, complex, apparent, deformed) four - quadrantly, on each phase and on three phases
- energies (active and reactive), four-quadrantly

CHARACTERISTICS

- **small dimensions and easy mounting:**
 - modular casing easily mountable on standard DIN rail
- **internal memory:**
 - non-volatile internal memory with capacity of 12672 events, 9258 most recent periods of energy extraction, 6435 most recent average voltages and currents, allows storing of measurements and disturbances data
- **real-time monitoring**
- **DCF (option)**
 - allows automatic synchronisation with the atomic timepiece
- **four-quadrantal energy meter with Power Guard**
- **communication:**
 - communication with master system via MODBUS RTU protocol
 - RS-485 or RS-232 serial transmission
- **safe measurement inputs**
 - galvanically insulated current inputs and high-impedance voltage inputs
- **digital inputs and outputs**
 - signalisation of events, detection and recording of inputs logic states
- **temperature measurement -**
 - additional PWM input for external temperature measuring
- **register of events**

EVENTS REGISTRATION

- overrides of preset min. and max. thresholds of measured parameters, average values from 200ms periods
- voltage decays and surges (resolution: ½ network cycle)
- power supply decays and device restarts
- configuration changes
- digital inputs and outputs state alterations

FUNCTIONAL QUALITY:

Events register -

chronological list of 12672 most recent events:

- voltages and currents overrides
- voltages and currents asymmetry
- cosine overrides
- voltage dips, decays and surges
- digital inputs state alterations
- meter power-ups and shut-downs
- meter configuration changes

Direct measurement:

- connection of the analyser's current inputs directly to the supply network (without CT's)
- direct measurement on loads up to 43 kVA

Periodic power extraction register –

9258 periods (e.g. 15 min.):

- power consumption during a selected period
- start and end date, and duration of a selected period
- watt-hour meters state at the end of a selected period

Voltages and currents register :

- independent recording of up to 6435 TrueRMS values of voltages and currents on all phases with pre-defined intervals,
- programmable time of voltage and current averaging
- programmable recording time.

TECHNICAL INFORMATION:

Voltage inputs:

number of inputs	3
nominal range of measured voltage	230 V (100 V) AC
withstand voltage at network frequency	2,5 kV
accuracy	0,5%
voltage circuit input impedance	>1,5 MΩ

Current inputs indirect measurement:

number of inputs	3
nominal range of measured current	5 A (1 A) AC
overcurrent factor	160 A AC
accuracy	0,5 %
current circuit input impedance	<5 mΩ

Current inputs direct measurement:

number of inputs	3
nominal range of measured current	63 A AC
overcurrent factor	240 A AC
accuracy	0,5 %
current circuit input impedance	<0,25 mΩ

Digital Inputs:

number of inputs	6
operating voltage	±24 V DC
switching threshold	1 mA/1,2 mA DC
input resistance	4 kΩ
time constant	100 ms
shared insulation	1,5 kV AC

Digital Outputs:

number of outputs	3
operating voltage	30 V DC, 24 V AC
load capacity	100 mA
output resistance	<10 Ω
shared insulation	1,5 kV AC

Communication:

interface type	RS-485 (RS-232)
RS485 transmitters receiver capacity	up to 32
transmission speed	1200...57600 Bd
galvanic insulation	1,5 kV
communication protocol	MODBUS RTU

Configuration:

remote setting	YES
local operation (keypad, remote control)	NO

Power Supply:

voltage	18 V ÷ 36 V DC
power consumption	<2 W

Usage:

dimensions indirect (direct)	159 x 91 x 65 mm (229 x 91 x 65 mm)
number of modules	9 (13)
protection degree	IP20
weight	390 g (790 g)
operating temperature	-5° C ÷ 40° C
humidity	55 %

Certificate of Quality System:

0929/NBR/07
0930/NBR/07

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