**UMG 509 Pro / UL / 48-110V AC / 24-150V** **DC**

Multifunctional network analyser

Suitable for measurement in all levels of TN & TT networks as well as in IT networks with voltage transformers for recording current, voltage, frequency, active, apparent & reactive power (per phase & total) in the frequency range 40 - 70 Hz, power factor & cos phi, active, apparent & reactive energy total as well as consumption and output of active & reactive energy (4-quadrant measurement) in separate memory values as well as 4 tariffs, continuous true RMS measurement.

Modbus RTU & TCP master function for network connection to own or higher-level software systems of max. 31 DIN rail or front panel devices as well as energy meters, data loggers & expansion modules per master device of the manufacturer's current product series. Ethernet gateway function as well as integration of Modbus RTU-certified third-party products after specific integration test via generic Modbus profiles. Simultaneous supply of the communication interfaces as well as parallel operation of 4 Modbus TCP ports.

Functional extensions via installable APPs as well as already pre-installed APPs with the following range of functions on the web server: Graphical display of online & historical measured values as well as comparison & interpretation of the recorded measured values with the power quality characteristics as well as their limit values according to IEC 61000-2-4.

Freely programmable logical & mathematical functions for evaluating the measured data, the digital inputs and outputs & external ModBus variables via 7 graphic, exchangeable programs (cycle >= 200 ms) such as limit value monitoring, weekly timer, etc.

Provision of measured values for comparison of power quality characteristics as well as their limit values according to IEC 61000-2-4 in industrial supply networks.

Measurement of the positive, negative and zero sequence, unbalance voltage and rotating field direction. Total harmonic distortion (THD-I & THD-U), single harmonics (even / odd) for current & voltage up to the 63rd harmonic as well as K-factor.

Sampling rate of 20 kHz with 400 measuring points per period & output of the measured values via the interfaces (cycle >=200 ms), acquisition of transient events 50 µs, acquisition of over- & undervoltage as well as short-term interruptions with 20 ms acquisition cycle for visualisation, full-wave RMS recorder for events & event display (over- & undervoltage & overcurrent) in waveform. 256 MB internal measurement data memory (flash) freely configurable by the user, clock with buffering.

Accuracy classes according to IEC 61557-12 at 50/60 Hz:

Active energy: 0.2S / Current: 0.2 / Voltage: 0.1

Front panel mounting unit, 144 x 144 x 81 mm (WxHxD), colour graphic display, 320 x 240 pixels, 6 keys, 256 colours, protection class (front / rear) IP 40 / IP 20, protection class: I, net weight: 1080 g, heat dissipation: max. 9 W, UL 61010-1 certified.

Supply voltage:

Nominal range: 48 - 110 V AC, 24 - 150V DC

Frequency range (AC): 50 / 60 Hz

Overvoltage category: 300V CAT III

Voltage measurement:

3 Ph. + N (L-N / L-L) max.: IEC: 417 / 720V, UL: 347 / 600 V

3 Ph. without N/PE (L-L) max.: 600 V

Overvoltage category: 600V CAT III

Current measurement:

Quantity: 4x

Measuring range / resolution: 5 mA to 7 A rms / 0.1 mA

Overvoltage category: 300V CAT II

Residual current measurement:

Quantity / type: 2x type A with dynamic limit value

Measuring range / resolution: 100 µA to 40 mA rms / 1 µA

Data interfaces:

Modbus (RS485), Ethernet (RJ45), Profibus (DSUB-9)

Data protocols:

Modbus RTU & TCP, TCP/IP, DHCP, HTTP, NTP, SMTP Ethernet Gateway, FTP, TFTP, Profibus DP/V0, BACnet IP (optional).

Digital outputs:

Number / type: 2x optocoupler outputs

Function type: Pulse or limit value output

Supply: 24 V DC passive, galvanically insulated

Switching current / voltage / frequency: 50 mA effective / 60 V DC / 20 Hz

Digital inputs:

Number: 2x

Type of function: Digital or pulse input

Switching voltage level: 0 - 28 V DC

Counting frequency: max. 20 Hz

Temperature measurement:

Quantity / type / total burden: 1x 3-wire measurement with 4 kOhm

Compatible sensors: PT100/1000, KTY83/84

Delivery includes:

Mounting accessories, documentation, parameterisation, & evaluation software in basic version, tuning of the design to the practical application as well as the measured variables incl. their recording intervals, compatible current transformer set min. Kl. 0.5 all-phase, measuring transformer disconnect terminals with screw connection 0.2 - 10 mm², bridges as well as DIN rail clamp for DIN rail mounting according to DIN VDE 0100 - 557.5.3.1, compatible residual current transformers, configuration and parameterisation of the unit (e.g. mains form, transformer ratios, addressing of the communication interfaces), delivery, installation as well as connection.

Primary current at measuring point: '.........'. A.

Unit version with data communication protocol

BACnet / IP (Yes / No): '.........'.

Manufacturer: Janitza electronics GmbH

Type: UMG 509 Pro

Art.no.: 5226003