UMG 96-PA – energy measurement device

Power Analyser

Oscilloscope   UMG 96-PA

500A
300A
100A
-100A
300A
Esc

1   2   3   4   5   6

Janitza   UMG 96-PA

4-IN-1
FOUR FUNCTIONS – ONE SOLUTION

€ EnMS   MID   PQ   RCM

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UMG 96-PA – energy measurement device

ENERGY MEASUREMENT DEVICE

4-in-1: Energy management, MID, power quality monitoring and RCM monitoring

Intuitive user guidance

High quality colour graphics display with user-friendly menu guidance.

Peripherals

Additional application options with comprehensive peripherals (three digital inputs and outputs and an analogue output).

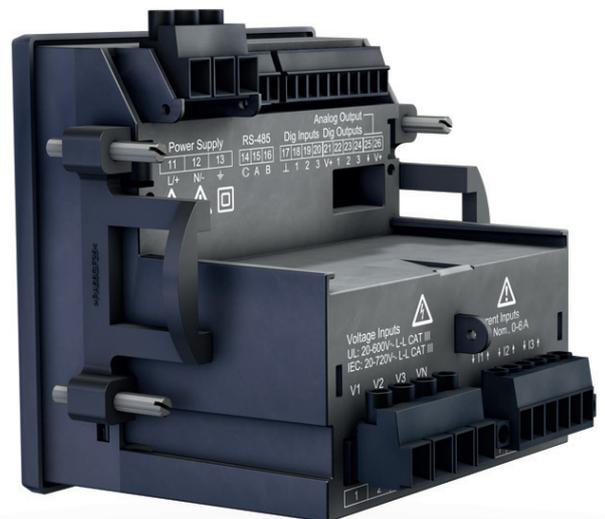### MID measurement   COMING SOON

Tamper-proof and legally secure acquisition of energy data.

Measurement of current and voltage parameters

Acquisition of current and voltage values in different forms of networks, TN and TT networks, with 600 V CAT III overvoltage category.
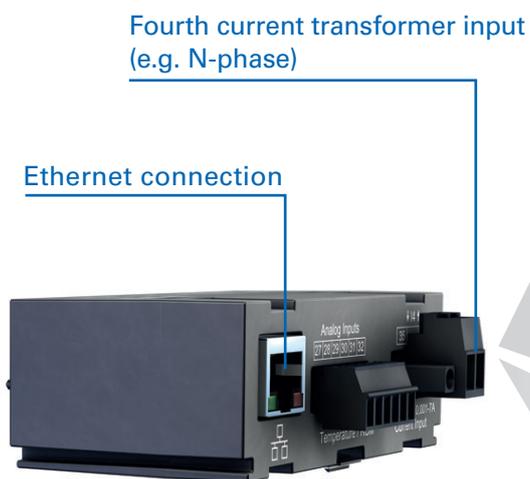

Colour graphics display

UMG 96-PA basic device without module

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UMG 96-PA modules

MODULAR EXPANSION

2 analogue inputs – can be selected as 0–20 mA analogue inputs
(e.g. DC measurement) or as RCM measuring inputs with detection of cable breaks
and additional temperature measurement

**Fourth current transformer input
(e.g. N-phase)**

Ethernet connection

COMING SOON

UMG 96-PA module with Ethernet connection

RCM measurement

The analogue inputs can be used for residual current monitoring. Thus, residual currents and insulation problems can be detected in time and the system availability assured. In addition, the effort required for the DGUV V3 repetitive testing can be significantly reduced.

or individually configurable as

2 analogue signals

Any 0/4 – 20 mA signals can be processed.

Additional temperature measurement

The UMG 96-PA module has an integrated temperature input for thermistors (PT 100/1000, KTY 83 or 84).

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UMG 96-PA – energy measurement device

UMG 96-PA basic device without MID*1

90–277 V AC / 90–250 V DC, CAT III	Item no. 52.32.001
24–90 V AC / 24–90 V DC, CAT III	Item no. 52.32.002

General

Accuracy of measurement with voltage, current	0.2%
Accuracy of measurement with active energy (kWh, …/5 A)	Class 0.5S

Inputs and outputs

Number of digital inputs and outputs	3 each
Analogue output	1

RMS - momentary values, e.g.:

Current, voltage, frequency	•
Effective, reactive and apparent power	•
Power factor	•

Energy measurement

Active, reactive and apparent energy	•
Number of tariffs	HT / LT

Recording of the mean values, e.g.:

Voltage, current / live and maximum	•
Active, reactive and apparent power / present and maximum	•
Frequency / present and maximum	•

Measurement of the power quality

Harmonics per order / current and voltage	1.–25.
Distortion factor THD-U / THD-I in %	•
Current and voltage, positive, zero and negative sequence component	•

Measured data recording

Memory (Flash)	4 MB
Mean, minimum, maximum values	•

Interface / protocol

RS485 / Modbus RTU	•

Programming / threshold values / alarm management

Comparator (2 Groups with 3 comparators each)	•

Measured voltage input | 3 x

Overvoltage category	600 V CAT III
Metering range, voltage L-N, AC (without transformer)	0 - 600 Vrms (± 10%)
Metering range, voltage L-L, AC (without transformer)	0 - 1040 Vrms (± 10%)
Frequency measuring range	45 to 65 Hz
Sampling rate per channel (50 / 60 Hz)	8.33 kHz
Measurement in quadrants	4
Networks	TN, TT

Measured current input | 3 x

Rated current	1 / 5 A
Overvoltage category	300 V CAT II
Sampling rate	8.33 kHz

Mechanical properties

Net weight (with attached connectors)	approx. 250 g
Device dimensions in mm (H x W x D)	96 x 96 x 86
Protection class per EN 60529 (with sealing = IP54)	Front IP40 / back IP20
Assembly per IEC EN 60999-1 / DIN EN 50022	Front panel installation

Environmental conditions

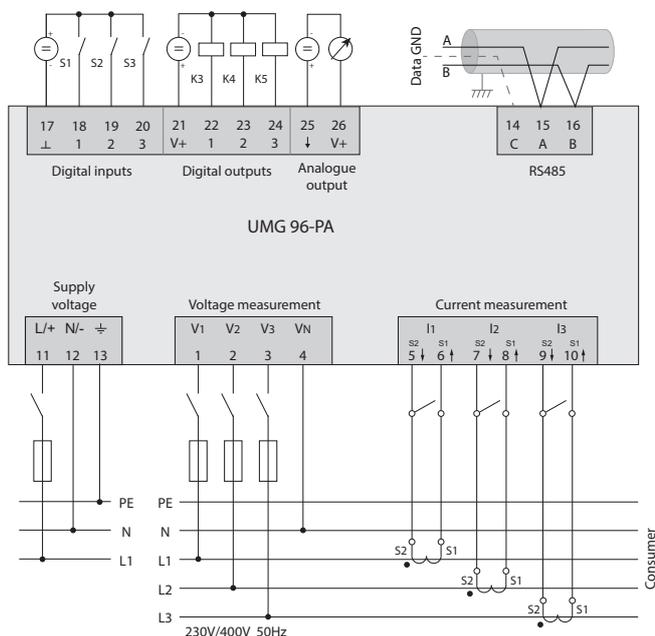|	
Temperature range, operation	K55 (–10 to +55 °C)

Software GridVis® Basic*2 | • |

For detailed technical information, please refer to the operation manual and the Modbus address list.

• = included

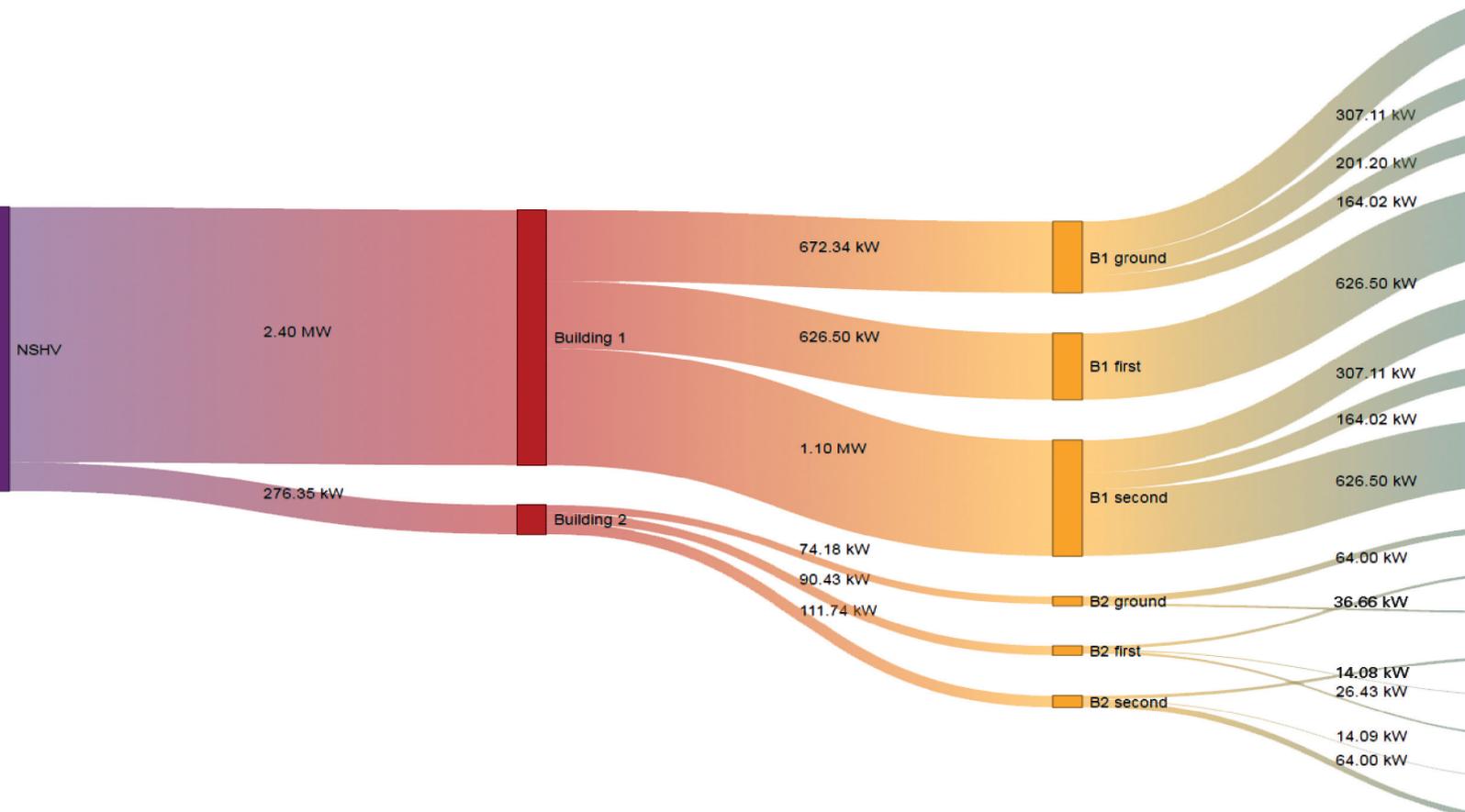*1 MID certification applied for

*2 Optional additional functions with the packages GridVis®-Professional, GridVis®-Service and GridVis®-Ultimate available.

UMG 96-PA connection example

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UMG 96-PA – energy measurement device

WE COMBINE...

NSHV → 2.40 MW → Building 1
NSHV → 276.35 kW → Building 2
Building 1 → 672.34 kW → B1 ground
Building 1 → 626.50 kW → B1 first
Building 1 → 1.10 MW → B1 second
Building 2 → 74.18 kW
Building 2 → 90.43 kW
Building 2 → 111.74 kW → B2 ground / B2 first / B2 second
B1 ground → 307.11 kW / 201.20 kW / 164.02 kW
B1 first → 626.50 kW
B1 second → 307.11 kW / 164.02 kW / 626.50 kW
B2 ground → 64.00 kW / 36.66 kW
B2 first → 14.08 kW / 26.43 kW
B2 second → 14.09 kW / 64.00 kW

Network visualisation software *GridVis*®

Visualisation
– Sankey diagrams (energy flow diagram)
– KPIs (key figures)
– Dashboards and widgets
– Topology overview

Reporting and documentation
– Energy calculation
– PQ report
– RCM report

Connectivity
– REST interface
– Data export
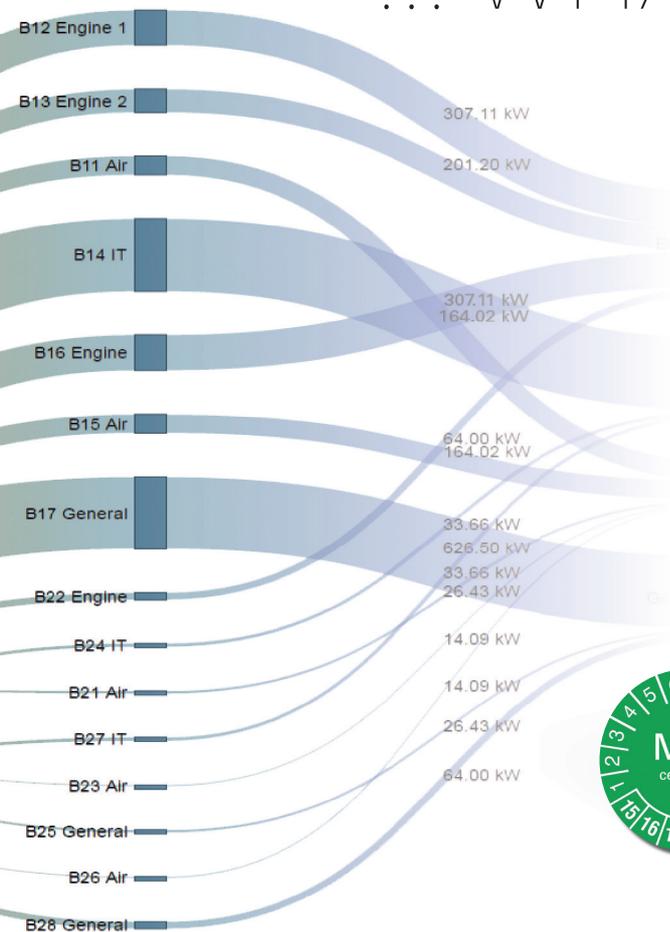– Various external devices by means of Modbus TCP/RTU

Alarm management
– Fast and reliable signalling of fault states
– Escalation management

Software

Some functions are only available with advanced GridVis® editions

UMG 96-PA – energy measurement device

... WHAT COUNTS!

B12 Engine 1

B13 Engine 2

B11 Air

B14 IT

B16 Engine

B15 Air

B17 General

B22 Engine

B24 IT

B21 Air

B27 IT

B23 Air

B25 General

B26 Air

B28 General

307.11 kW

201.20 kW

307.11 kW
164.02 kW

64.00 kW
164.02 kW

33.66 kW
626.50 kW
33.66 kW
26.43 kW

14.09 kW

14.09 kW

26.43 kW

64.00 kW

Power Analyser

Energy/Month   UMG 96-PA

1.0
0.8
0.6
0.4
0.2
[kWh]   2   4   6   8   10   12
Esc

1   2   3   4   5   6

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MID
certified

Hardware

Four functions – one energy measurement device

EnMS

Energy management system
– Continuous energy monitoring
– Identification of potential savings
– Reduction of energy costs
– Fulfilment of control & regulatory requirements

MID

MID-compliant measurement
– Certified and tamper-proof MID measurement
– Legally secure accounting & energy acquisition
– Fulfilment of legal requirements

PQ

Power quality
– Secure, highly available power supply
– Avoidance of production stoppages
– Maximisation of operating times/preventative maintenance
– Prevention of product quality defects

RCM

Residual current monitoring (RCM)
– Continuous residual current monitoring
– Support for fire protection and personnel protection
– Effort reduction with the DGUV V3 tests
– Increased system availability

Modules for the UMG 96-PA

COMING SOON

Module **without** Ethernet connection (RJ45)	Available soon
Module **with** Ethernet connection (RJ45)	Available soon

Residual current input

Analogue inputs	2 for residual current or analogue measurement
Rated current	30 mA rms
Triggering current	50 µA
Resolution	1 µA

Temperature measurement	**1 x**
Update time	1 second
Connectable sensors	PT100, PT1000, KTY83, KTY84

Current measurement I4

Rated current	1 / 5 A
Overvoltage category	300 V CAT II
Power consumption	Approx. 0.2 VA (Ri = 5 mOhm)
Sampling rate	8.33 kHz

Interface

Ethernet connection	RJ45
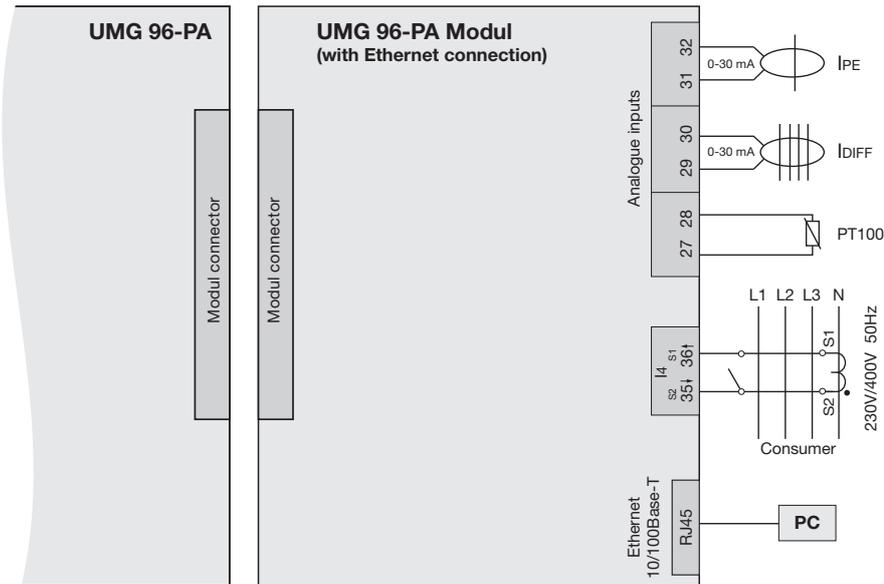
UMG 96-PA modul connection example

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