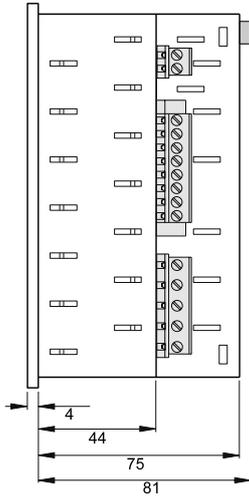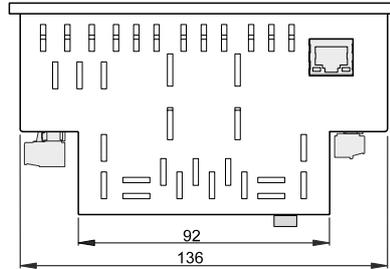# Dimension diagrams

All dimensions in mm

Side view

View from below
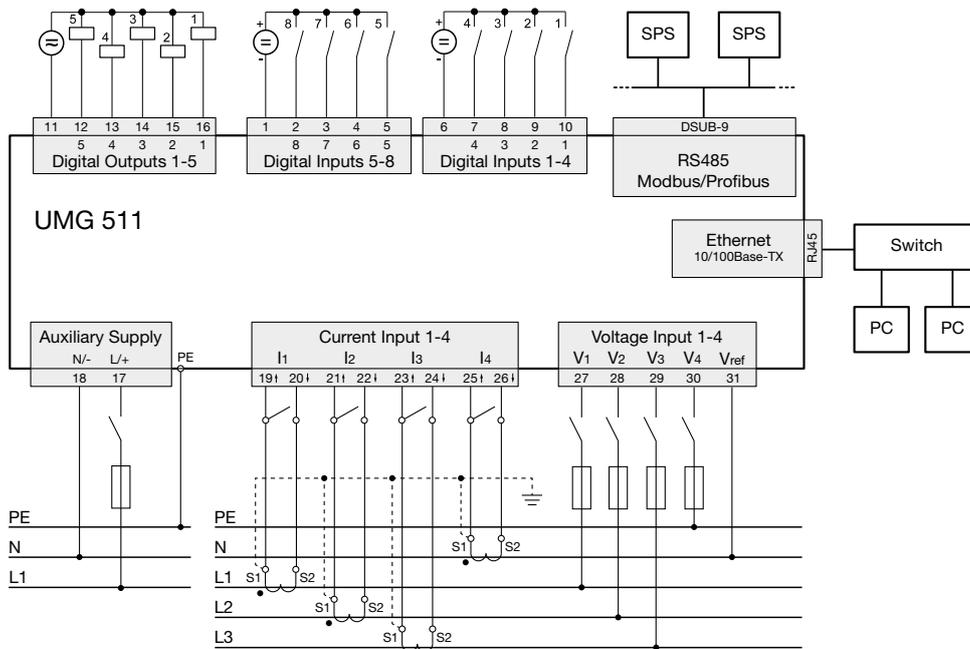
Rear view

Cut out: 138$^{+0,8}$ x 138$^{+0,8}$ mm

Typical connection

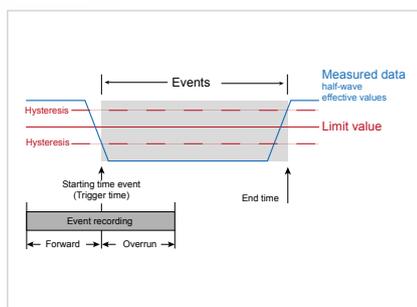# Device overview and technical data

Fig.: The event record consists of a mean value, a minimum or maximum value, a start time and an end time.

	UMG 511		
Item number	**52.19.001**	**52.19.002**	**52.19.003**
Supply voltage AC	95 ... 240 V AC	44 ... 130 V AC	20 ... 50 V AC
Supply voltage DC	80 … 340 V DC	48 … 180 V DC	20 … 70 V DC
Item number (UL)	**52.19.011**	**52.19.012**	
Supply voltage AC	95 ... 240 V AC	44 ... 130 V AC	
Supply voltage DC	80 … 280 V DC	48 … 180 V DC	
Device options			
Emax function	**52.19.080**	**52.19.080**	**52.19.080**
BACnet communication	**52.19.081**	**52.19.081**	**52.19.081**

General information	
Use in low, medium and high voltage networks	•
Accuracy voltage measurement	0.1 %
Accuracy current measurement	0.2 %
Accuracy active energy (kWh, …/5 A)	Class 0.2S
Number of measurement points per period	400
Seamless measurement	•
RMS - momentary value	
Current, voltage, frequency	•
Active, reactive and apparent power / total and per phase	•
Power factor / total and per phase	•
Energy measurement	
Active, reactive and apparent energy [L1, L2, L4, L3, ∑ L1–L3, ∑ L1–4]	•
Number of tariffs	8
Recording of the mean values	
Voltage, current / actual and maximum	•
Active, reactive and apparent power / actual and maximum	•
Frequency / actual and maximum	•
Demand calculation mode (bi-metallic function) / thermal	•
Other measurements	
Operating hours measurement	•
Clock	•
Weekly timer	Jasic®
Power quality measurements	
Harmonics per order / current and voltage	1st - 63rd
Harmonics per order / active and reactive power	1st - 63rd
Distortion factor THD-U in %	•
Distortion factor THD-I in %	•
Voltage unbalance	•
Current and voltage, positive, zero and negative sequence component	•
Flicker	•
Transients	> 50 µs
Error / event recorder function	•
Short-term interruptions	20 ms
Oscillogram function (wave form U and I)	•
Ripple voltage signal	•
Under and overvoltage recording	•
Measured data recording	
Memory (Flash)	256 MB
Average, minimum, maximum values	•
Measured data channels	8
Alarm messages	•
Time stamp	•
Time basis average value	freely user-defined
RMS averaging, arithmetic	•

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

• = included   - = not included

Displays and inputs / outputs	
LCD colour graphical display 320 x 240, 256 colours, 6 buttons	•
Language selection	•
Digital inputs	8
Digital outputs (as switch or pulse output)	5
Voltage and current inputs	each 4
Password protection	•
Peak load management (optionally 64 channels)	•
Communication	
Interfaces	
RS485: 9.6 – 921.6 kbps (DSUB-9 connector)	•
Profibus DP: Up to 12 Mbps (DSUB-9 connector)	•
Ethernet 10/100 Base-TX (RJ-45 socket)	•
Protocols	
Modbus RTU, Modbus TCP, Modbus RTU over Ethernet	•
Modbus Gateway for Master-Slave configuration	•
Profibus DP V0	•
HTTP (homepage configurable)	•
SMTP (email)	•
NTP (time synchronisation)	•
TFTP	•
FTP (file transfer)	•
SNMP	•
DHCP	•
TCP/IP	•
BACnet (optional)	•
ICMP (Ping)	•
Software GridVis®-Basic*1	
Online and historic graphs	•
Databases (Janitza DB, Derby DB); MySQL, MS SQL with higher GridVis® versions)	•
Manual reports (energy, power quality)	•
Graphical programming	•
Topology views	•
Manual read-out of the measuring devices	•
Graph sets	•
Programming / threshold values / alarm management	
Application programs freely programmable	7
Graphical programming	•
Programming via source code Jasic®	•
Technical data	
Type of measurement	Constant true RMS up to the 63rd harmonic
Nominal voltage, three-phase, 4-conductor (L-N, L-L)	417 / 720 V AC *2
Nominal voltage, three-phase, 3-conductor (L-L)	600 V AC
Measurement in quadrants	4
Networks	TN, TT, IT
Measurement in single-phase/multi-phase networks	1 ph, 2 ph, 3 ph, 4 ph and up to 4 times 1 ph
Measured voltage input	
Overvoltage category	600 V CAT III
Measured range, voltage L-N, AC (without potential transformer)	10 … 600 Vrms
Measured range, voltage L-L, AC (without potential transformer)	18 … 1000 Vrms
Resolution	0.01 V
Impedance	4 MOhm / phase
Frequency measuring range	15 … 440 Hz
Power consumption	approx. 0.1 VA
Sampling frequency	20 kHz / phase
Measured current input	
Rated current	1 / 5 A
Resolution	0.1 mA
Measurement range	0.001 … 8.5 Amps
Overvoltage category	300 V CAT III
Measurement surge voltage	4 kV
Power consumption	approx. 0.2 VA (Ri = 5 MOhm)
Overload for 1 sec.	120 A (sinusoidal)
Sampling frequency	20 kHz

Fig.: Example, current measurement via a summation current transformer

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

• = included   - = not included

*1 Optional additional functions with the packages GridVis®-Professional, GridVis®-Enterprise and GridVis®-Service.
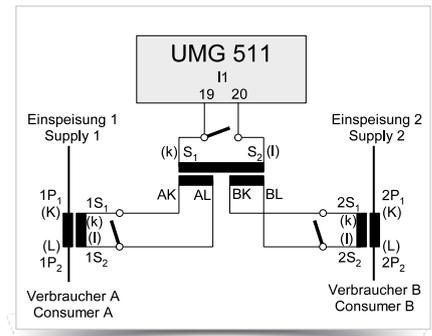*2 With UL variants: 347/600 V

Digital inputs and outputs	
Number of digital inputs	8
Maximum counting frequency	20 Hz
Reaction time (Jasic® program)	200 ms
Input signal present	18 ... 28 V DC (typically 4 mA)
Input signal not present	0 ... 5 V DC, current < 0.5 mA
Number of digital outputs	5
Switching voltage	max. 60 V DC, 30 V AC
Switching current	max. 50 mA Eff AC / DC
Output of voltage dips	20 ms
Pulse output (energy pulse)	max. 20 Hz
Maximum cable length	up to 30 m unscreened, from 30 m screened
Mechanical properties	
Weight	1080 g
Device dimensions in mm (H x W x D)	144 x 144 x approx. 81
Battery	Type CR1/2AA, 3 V, Li-Mn
Protection class per EN 60529	Front: IP40; Rear: IP20
Assembly per IEC EN 60999-1 / DIN EN 50022	Front panel installation
Connecting phase (U / I), Single core, multi-core, fine-stranded Terminal pins, core end sheath	0.2 to 2.5 mm² 0.25 to 2.5 mm²
Environmental conditions	
Temperature range	Operation: K55 (-10 ... +55 °C)
Relative humidity	Operation: 0 to 95 % RH
Operating height	0 ... 2,000 m above sea level
Degree of pollution	2
Installation position	user-defined
Electromagnetic compatibility	
Electromagnetic compatibility of electrical equipment	Directive 2004/108/EC
Electrical appliances for application within particular voltage limits	Directive 2006/95/EC
Equipment safety	
Safety requirements for electrical equipment for measurement, regulation, control and laboratory use – Part 1: General requirements	IEC/EN 61010-1
Part 2-030: Particular requirements for testing and measuring circuits	IEC/EN 61010-2-030
Noise immunity	
Class A: Industrial environment	IEC/EN 61326-1
Electrostatic discharge	IEC/EN 61000-4-2
Voltage dips	IEC/EN 61000-4-11
Emissions	
Class B: Residential environment	IEC/EN 61326-1
Radio disturbanc voltage strength 30 – 1000 MHz	IEC/CISPR11/EN 55011
Radiated interference voltage 0.15 – 30 MHz	IEC/CISPR11/EN 55011
Safety	
Europe	CE labelling
USA and Canada	UL variants available
Firmware	
Firmware update	Update via GridVis® software. Firmware download (free of charge) from the website: http://www.janitza.com/downloads/

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

• = included   - = not included
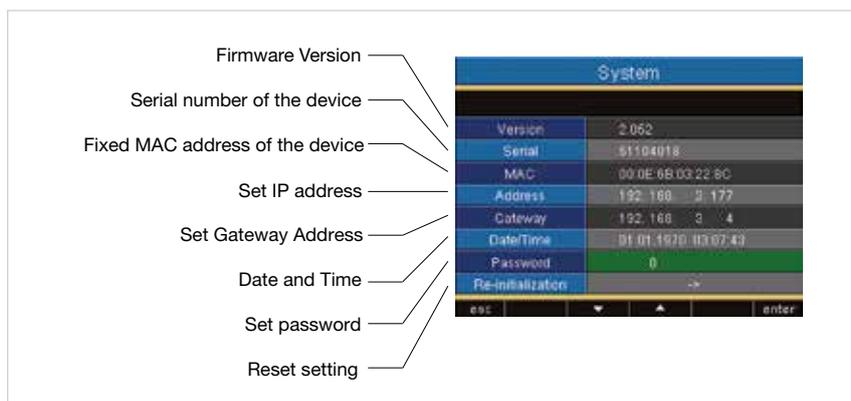
Fig.: User-friendly system of IP addresses, date, time and password

Firmware Version
Serial number of the device
Fixed MAC address of the device
Set IP address
Set Gateway Address
Date and Time
Set password
Reset setting

System

Version	2.062
Serial	51104018
MAC	00.0E.6B.03.22.8C
Address	192.168. 3.177
Gateway	192.168. 3. 4
Date/Time	01.01.1970 03.07.43
Password	0
Re-initialization	->

Energy and Power Values

Annual Overview

From:	01.01.2013	01.01.2012
To:	31.12.2013	31.12.2012

Main power supply

Enhanced Power Quality Report

Customer		Tester	
Name:		Name:	
Company:		Company:	
Location:			

Start date:	22.07.2012 03:00
End date:	29.07.2012 02:59
Datum:	04.08.2012 19:45
Software:	GridVis

Measurement Point:	UMG511
UMG Serial Number:	
Device type:	UMG511
EN 61000-4-7 Class:	Class 1
EN 61000-4-30 Class:	Class A
Flicker:	Supported
Events:	Supported
Transients:	Supported

	Minimum	Maximum	Ergebnis
Voltage effective L1, L2, L3	212,64V	239,27V	Passed
Voltage effective L1	213,18V	240,77V	Passed
Voltage effective L2	208,06V	236,87V	Passed
Voltage effective L3	212,64V	239,27V	Passed
Current effective L1, L2, L3	21,94A	81,94A	
THD U L1, L2, L3	1,51%	4,65%	Passed
THD U L1	1,56%	4,43%	Passed
THD U L2	1,65%	4,44%	Passed
THD U L3	1,51%	4,65%	Passed
THD I L1, L2, L3	5,32%	16,65%	
THD I L1	4,05%	16,28%	
THD I L2	4,04%	20,30%	
THD I L3	5,32%	16,65%	
Active Power Sum L1-L3	16,81kW	50,50kW	
Reactive Power Sum L1-L3	-2907,20var	9749,24var	
Apparent Power Sum L1-L3	17,16kVA	51,04kVA	
cos phi(math.) Sum L1-L3	0,96	1,00	
Frequency +-1%	49,83Hz	50,29Hz	Passed
Frequency -6%/+4%	49,83Hz	50,29Hz	Passed
Unbalance Voltage	0,08%	0,89%	Passed
Long term flicker L1(Limit: 1.0)	0,56	1,71	Failed

Enhanced Power Quality Report

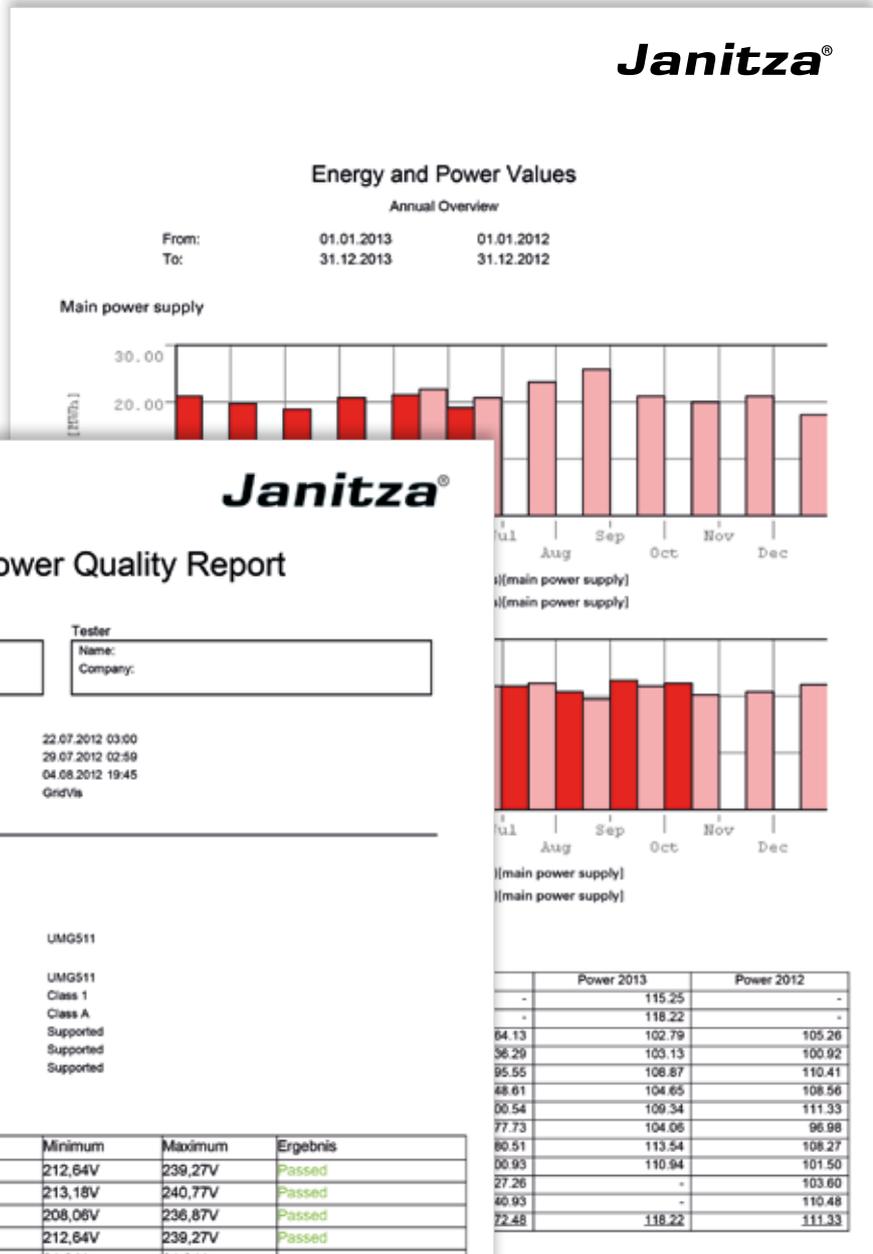|	Power 2013	Power 2012
-	115.25	-
-	118.22	-
64.13	102.79	105.26
36.29	103.13	100.92
95.55	108.87	110.41
48.61	104.65	108.56
00.54	109.34	111.33
77.73	104.06	96.98
80.51	113.54	108.27
00.93	110.94	101.50
27.26	-	103.60
40.93	-	110.48
72.48	118.22	111.33

Fig.: Automatically generated power quality and energy report