Type	UMG 103-CBM (UL certified)	UMG 20CM	Module 20CM-CT6	UMG 604-PRO (UL certified) E / EP	UMG 605-PRO (UL certified)	UMG 801 (UL certified)	Module 800-CT8-A (UL certified)	UMG 806	806-EC1	806-ED1	806-EI1
Item number	52.28.001	14.01.625	14.01.626	52.16.202 / 52.16.201	52.16.227	52.31.001	52.31.201	14.02.015	14.02.016	14.02.019	14.02.020
Use in three-phase 4-conductor systems with grounded neutral conductor up to a max.	277 / 480 V AC	230 / 400 V AC	Only current measurement	277 / 480 V AC	277 / 480 V AC	347 / 600 V AC (acc. to UL) 480 / 830 V AC (acc. to IEC)	Only current measurement	230 / 400 V AC			
Use in three-phase 3-conductor systems ungrounded up to a max.	-	-		480 V AC	480 V AC	690 V AC		400 V AC			
Supply voltage	-	90 – 276 V AC; 90 – 276 V DC		95 – 240 V AC; 135 – 340 V DC*1	95 – 240 V AC; 135 – 340 V DC*1	24 – 48 V DC, PELV		80 – 270 V AC; 80 – 270 V DC			
Three-conductor / four-conductor (L-N, L-L)	- / •	• / •		• / •	• / •	• / •		• / •			
Quadrants	4	4	4	4	4	4	4	4			
Sampling rate 50/60 Hz	5.4 kHz	20 kHz	60 kHz	20 kHz	20 kHz	51.2 kHz (V) / 25.6 kHz (A)	8.33 kHz	8 kHz			
National certification according to PTB-A 50.7											
Effective value from periods (50/60 Hz)	10 / 12	10 / 12	10 / 12	10 / 12	10 / 12	10 / 12	10 / 12	10 / 12			
Residual current inputs	-	20*11	6*11	-	-	4*4	-	1			
Current measuring channels	3	20*11	6–96 (max. 16 modules)*11	4	4	8	8–80 (max. 10 modules)	4			4*12
Thermistor input	-	-	-	1	1	4*4	-	1			
Harmonics V / A	1. – 40.	1. – 63.	1. – 63.	1. – 40.	1. – 63.	1.–127. / 1.–63.	1., 3., 5. ... 15.	1. – 31.			
Distortion factor THD-U / THD-I in %	•	•	only THD-I	•	•	•	only THD-I	•			
Unbalance	-	-	-	•	•	•	-	-			
Short-term flicker / long-term flicker	-	-	-	-	-	-	-	-			
Transients	-	-	-	> 50 µs	> 50 µs	-	-	-			
Short-term interruptions	-	-	-	-	-	-	-	-			
Accuracy V; A	0.2%; 0.2%	1%; 1%	– ; 0.5%	0.2%; 0.25%	0.2%; 0.25%	0.2%; 0.2%	0.5%	0.2%; 0.2%			
Class A per EN 61000-4-30	-	-	-	-	-	-	-	-			
Active energy class	0.5S (.../5 A)	1	2	0.5S (.../5 A)	0.5S (.../5 A)	0.25 (.../5 A)	0.5S (.../5 A)	0.5S (.../5 A)			
Digital inputs	-	-	-	2	2	4	-	-		4	
Digital / pulse output	-	2	-	2	2	4	-	-		2	2
Analogue output	-	-	-	-	-	1	-	-			
Memory min. / max. values	•	-	•	•	•	•	-	•			
Memory size	4 MB	768 KB	only via UMG 20CM	128 MB	128 MB	4 GB	-	4 MB			
Clock	•	only via UMG 20CM	-	•	•	•	*9	•			
Integrated logic	Comparator	Current threshold values per channel	Current threshold values per channel	Jasic® (7 Prg.)	Jasic® (7 Prg.)	-	*9	-			
Web server / e-mail	-	-	-	• / •	• / •	-	-	-			
APPs: Measured value monitor, EN 50160 & IEC 61000-2-4 Watchdog	-	-	-	•	•	•	-	-			
Fault recorder function	-	-	-	•	•	•	-	-			
Peak load optimisation	-	-	-	•*2	•*2	-	-	-			
Software for energy management and network analysis	GridVis®-Basic	GridVis®-Basic	GridVis®-Basic	GridVis®-Basic	GridVis®-Basic	GridVis®-Basic	GridVis®-Basic	GridVis®-Basic		GridVis®-Basic	
Interfaces											
RS232	-	-	-	•	-	-	-	-			
RS485	-	•	only via UMG 20CM	•	•	•	•*9	•			
USB	-	-	-	•	•	•	-	-			
D-Sub-9-connector (Profibus)	-	-	-	•	-	-	-	-			
M-Bus	-	-	-	-	•	-	-	-			
Ethernet	-	-	-	•	•	2	•*9	-	•		
Protocols											
Modbus RTU	•	only via UMG 20CM	only via UMG 20CM	•	•	•	•*9	•			
Modbus gateway	-	-	-	•	•	-	-	-			
Profibus DP V0	-	-	-	•	-	-	-	-			
Modbus TCP/IP, Modbus RTU over Ethernet	-	-	-	•	•	•*10	•*9	-	•		
SNMP	-	-	-	•	•	Modbus TCP/IP	-	-			
OPC UA	-	-	-	•	•	•	•*9	-			
BACnet IP	-	-	-	•*2	•*2	-	*9	-	•		
Profinet	-	-	-	•*2	•*2	-	-	-			

Column descriptions:
- UMG 103-CBM — Compact energy analyzer
- UMG 20CM — Multichannel operating current and residual current measurement device
- Module 20CM-CT6 — Modular expansion for the UMG 20CM
- UMG 604-PRO — Functionally expandable power analyzer
- UMG 605-PRO — Power quality analyzer (Class S according to IEC 61000-4-30)
- UMG 801 — Modularly expandable energy measurement device
- Module 800-CT8-A — Modular expansion for the UMG 801
- UMG 806 — Modularly expandable universal measurement device
- Modules 806-EC1/ED1/EI1 — Modular expansions for the UMG 806

Legend / footnotes:
- • : included
- - : not included
- *1 Other voltages are also available as options
- *2 Option
- *3 Combination options for inputs and outputs:
  a) 5 digital outputs
  b) 2 Digital outputs and 3 digital inputs
- *4 Combined function: optional analogue / temperature / residual current input
- *5 2 Pulse outputs
- *6 SNMP only for internal PROFINET communication
- *7 With module + 1 current measurement channel
- *8 MID certified
- *9 On the basic device
- *10 For polling the slave device
- *11 Combined function: optional operating current or residual current
- *12 These are 4...20 mA signal inputs
- *13 230 / 400 V AC (acc. to UL) at MID/MID+ variants
- Comment: For detailed technical information please refer to the respective operation manuals and the Modbus address lists.

GridVis® SOFTWARE

Energy management, power quality, residual current monitoring:
Visualising, analysing, generating alerts, documenting

Energy management (EnMS)
Certified according to ISO 50001. You are on the safe side when it comes to topics, such as BAFA, reduction of EEG apportionments or even the peak balancing according to the German Energy-Saving Efficiency System Ordinance (SpaEfV).

Transparency
Gain an overview of consumption data and costs. Uncover increasing residual currents and overloads. Generate key performance indicators from consumption and measured data according to the provisions of ISO 50006.

Network analysis & evaluation
Analyse and evaluate measured data. Functions: statistics, line charts, pie charts, heat maps, CBEMA curves, duration curves, tables, Sankey diagram, key performance indicators.

Security & alarm management
Monitor threshold values of measured variables, consumption data, residual currents and communication. Reliable altering via e-mail and web interface.

Visualisation & documentation
Create your own dashboards and overviews with a large selection of functions and graphics. Profit from the prepared reports and documentation for the topics of energy management, power quality and residual current monitoring.

Dashboard example

OVERVIEW OF GridVis® EDITIONS

GridVis®-Basic – free basic version   51.00.116
- Event browser (NEW*1)
- Maximum five measurement devices
- Graphs and analysis tools
- Datenbase (Jan-DB)
- Reports:
  – Commissioning report
  – Energy and consumption reports
  – PQ reports (EN 50160, EN 61000-2-4 etc.)
  – RCM report

GridVis®-Professional   51.00.160
As GridVis®-Basic, but with the following additional features:
- Unlimited number of devices and data points
- Database drivers (MSSQL, MySQL)
- Automation (reading, timing, etc.)
- Virtual measurement devices and logic
- User management

GridVis®-Service   51.00.180
As GridVis®-Professional, but with the following additional features:
- Active directory (NEW*1)
- Expanded reports:
  – Utilization report (NEW*1)
  – Uptime
  – LET (Limits, Event, Transients)
  – Energy invoice
- COMTRADE data export
- MSCONS data import (NEW*1) and export
- Service including REST API
- Online recorder
- Alarm management
- Measured and consumption data export (CSV)
- External devices (generic Modbus)
- Expanded automation (reports, database actions, E-mail/alerting, cost centers and tariffs)

GridVis®-Ultimate   51.00.190
As GridVis®-Service, but with the following additional features:
- GridVis® Energy web interface
- Expanded user management
- Dashboard and template manager
- Widgets
- Key performance indicator evaluation (KPI)
- Sankey diagram (energy flow analysis)
- Device overview with graph function
- OPC UA client
- Image and symbol library

*1 NEW: from version 7.4

Janitza®

Type	UMG 96-S2	UMG 96RM (UL certified)					UMG 96-PA (UL certified)			UMG 96-PA modules (UL certified)		UMG 509-PRO (UL certified)	UMG 512-PRO (UL certified)
		P	M	E	CBM EL	PN	96-PA	96-PA-MID	96-PA-MID+	96-PA-RCM-EL	96-PA-RCM		
Item number	52.34.002	52.22.061	52.22.064	52.22.069	52.22.062	52.22.066 / 52.22.008 / 52.22.090	52.22.001	52.22.003	52.22.004	52.32.010	52.32.011	52.26.001	52.17.011
Use in three-phase 4-conductor systems with grounded neutral conductor up to a max.	230 / 400 V AC	277 / 480 V AC					347 / 600 V AC (acc. to UL)*13 / 417 / 720 V AC (acc. to IEC)					347 / 600 V AC (acc. to UL) / 417 / 720 V AC (acc. to IEC)	347 / 600 V AC (acc. to UL) / 417 / 720 V AC (acc. to IEC)
Use in three-phase 3-conductor systems ungrounded up to a max.	-	480 V AC					-					600 V AC	600 V AC
Supply voltage	90 – 265 V AC; 90 – 250 V DC	90 – 277 V AC; 90 – 250 V DC*1					90 – 277 V AC; 90 – 250 V DC*1					95 – 240 V AC; 80 – 300 V DC*1	95 – 240 V AC; 80 – 300 V DC*1
Three-conductor / four-conductor (L-N, L-L)	– / •	• / •					– / •					• / •	• / •
Quadrants	4	4					4					4	4
Sampling rate 50/60 Hz	8 kHz	21.33/25.6 kHz					8.33 kHz					20 kHz	25.6 kHz
National certification according to PTB-A 50.7	-					•	-	•				-	-
Effective value from periods (50/60 Hz)	16 / 16	10 / 12					10 / 12					10 / 12	10 / 12
Residual current inputs	-	-	-	-	2	- 2	-			2		2	2
Current measuring channels	3	3	4	3	4	3 4	3*7			1		4	4
Thermistor input	-	-	-	2*4	-	- 2*4	-			1		1	1
Harmonics V / A	1. – 15.	1. – 40.					1. – 40.					1. – 63.	1. – 63.
Distortion factor THD-U / THD-I in %	•	•					•					•	•
Unbalance	-	-					-					•	•
Short-term flicker / long-term flicker	-	-					-					-	•
Transients	-	-					-					> 50 µs	> 39 µs
Short-term interruptions	-	-					-					•	•
Accuracy V; A	0.2%; 0.2%	0.2%; 0.2%					0.2%; 0.2%					0.1%; 0.2%	0.1%; 0.1%
Class A per EN 61000-4-30	-	-					-					-	•
Active energy class	0.5S (.../5 A)	0.5S (.../5 A)					0.2S (.../5 A)					0.2S (.../5 A)	0.2S (.../5 A)
Digital inputs	-	-	4	-	(3)*3	4 - (3)*3	3					2	2
Digital / pulse output	1	2	6	2	(5)*3	6 - (5)*3*15	3					2	2
Analogue output	-	-					1					-	-
Memory min. / max. values	•	•					•					•	•
Memory size	-	-	256 MB	-	256 MB	256 MB - -	8 MB					256 MB	256 MB
Clock	-	-					-					•	•
Integrated logic	-	Comparator					Comparator					Jasic® (7 Prg.)	Jasic® (7 Prg.)
Web server / e-mail	-	-	-	• / •	-	- • / -	-					• / •	• / •
APPs: Measured value monitor, EN 50160 & IEC 61000-2-4 Watchdog	-	-					-					•	•
Fault recorder function	-	-					-					•	•
Peak load optimisation	-	-					-					-	-
Software for energy management and network analysis	GridVis®-Basic	GridVis®-Basic					GridVis®-Basic			GridVis®-Basic		GridVis®-Basic	GridVis®-Basic
Interfaces													
RS232	•	-					-					•	-
RS485	•	•	•	•	•	•	•					•	•
USB	-	-					-					•	•
D-Sup-9-connector (Profibus)	-	-	-	•	-	-	-					•	-
M-Bus	-	-	-	-	•	-	-					•	-
Ethernet	-	-	-	-	•	2	-			•	-	•	•
Protocols													
Modbus RTU	•	•	•	•	•	•	•					•	•
Modbus gateway	-	-	-	•	•	• - -	-			•	-	•	•
Profibus DP V0	-	-	-	•	-	-	-			•	-	•	•
Modbus TCP/IP, Modbus RTU over Ethernet	-	-	-	-	•	-*8	-					•	•
SNMP	-	-					-					-	-
OPC UA	-	-					-					-	-
BACnet IP	-	-	-	-	•*2	-	-					•*2	•*2
Profinet	-	-					-					-	-

UMG 96-S2: Entry-level universal energy measurement device
UMG 96RM: Multifunctional power analyzer
UMG 96-PA: Modularly expandable energy measurement device (MID)
UMG 96-PA modules: Modular expansion for the UMG 96-PA
UMG 509-PRO: Multifunctional power quality analyzer
UMG 512-PRO: Certified power quality analyzer (Class A according to IEC 61000-4-30)

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3-IN-1 MONITORING

One System – three benefits

Benefit from our competence and our extensive services for the whole product life cycle. The hardware and software components are ideally geared to each other. Implement energy management, power quality monitoring and residual current monitoring in only one system environment.

Energy management DIN EN ISO 50001

- Reduces CO_2 emissions
- Reduces energy costs
- Improves energy efficiency

Power quality DIN EN 50160

- Ensures availability
- Reduces downtimes
- Optimises maintenance

Residual current monitoring (RCM)

- Effort reduction of the DGUV V3
- Improves supply reliability
- Rapidly identifies faults
- Improves fire protection

POWER QUALITY SOLUTIONS

Improvement of the power quality

Power quality and supply reliability are extremely important. High sensitivity devices and processes are heavily dependent on a clearly defined power quality. In order to ensure stable processes and adequate power supply despite the increasing number of devices which generate grid distortions, steps must be taken to improve the power quality.

Janitza electronics offers a comprehensive package to improve the power quality:

- Power factor correction in both inductive and capacitive ranges
- Dynamic power factor corrections
- Active and passive harmonics filter

Rapid amortisation through:

- Reduction of reactive power and savings in operational costs
- Reduction of harmonics
- Network symmetry between phases
- Reduction of transients and voltage dips
- Compensation with rapid switching actions
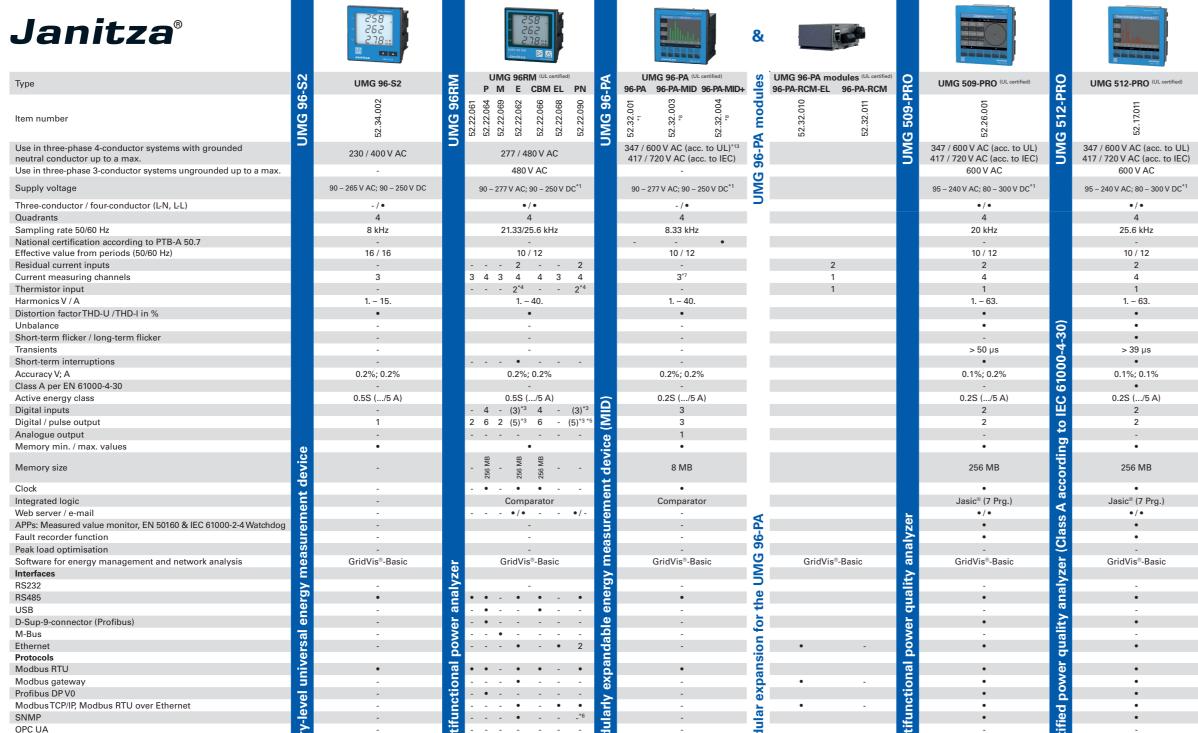- Reduction of switching spikes

EXPERTS IN
ENERGY MEASUREMENT
TECHNOLOGY

SHORT PRODUCT OVERVIEW

Janitza®