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Type	UMG 96-S2	UMG 96RM (UL certified) P	M	E	CBM	PN	UMG 96-PA (UL certified) 96-PA	96-PA-MID+	UMG 96-PQ-L (UL certified)	Module RCM-EL (UL certified)	UMG 509-PRO (UL certified)	UMG 512-PRO (UL certified)
Part number	52.34.002	52.22.061	52.22.064	52.22.069	52.22.082	52.22.066 / 52.22.090	52.32.021	52.32.004	52.36.001 / 52.36.021 / 52.36.005 / 52.36.025	52.32.010	52.26.001	52.17.011
Use in three-phase 4-conductor systems with grounded neutral conductor up to max.	230 / 400 V AC	277 / 480 V AC					347 / 600 V AC (UL)*13; 417 / 720 V AC (IEC)*13	347 / 600 V AC (UL); 417 / 720 V AC (IEC)			347 / 600 V AC (UL); 417 / 720 V AC (IEC)	347 / 600 V AC (UL); 417 / 720 V AC (IEC)
Use in three-phase 3-conductor systems ungrounded up to max.	-	480 V AC					600 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 frequency 50/60 Hz	8 kHz	21.33/25.6 kHz					8.13 kHz	13.67 kHz 13.97 kHz			20 kHz	25.6 kHz
Meter reading cycle as per 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	4 / 4	3*7			1	4	4
Thermistor input	-	-	-	2*4	-	2*4	-			1	1	1
Harmonics current V / A	1st – 15th	1st – 40th					1st – 40th		1st – 65th		1st – 63th	1st – 63th
Distortion factor THD-U / THD-I in %	•	•					•		•		•	•
Unbalance	-	-					-		-		•	•
Short / long-term flicker	-	-					-		•*14		-	•
Transients	-	-					-		-		> 50 µs	> 39 µs
Short-term interruptions	-	-	-	-	•	-	-		•		-	•
Accuracy V; A	0.2%; 0.2%	0.2%; 0.2%					0.2%; 0.2%		0.2%; 0.2%		0.1%; 0.2%	0.1%; 0.1%
IEC 61000-4-30	-	-					-		Class S*14		-	Class A
Active energy class	0.5S (.../5 A)	-					0.2S (.../5 A)		0.2S (.../5 A)		0.25 (.../5 A)	0.25 (.../5 A)
Digital inputs	-	-	4	-	(3)*3	4 (3)*3	3		3		2	2
Digital / pulse output	1	2	6	2	(5)*3	6 (5)*3*5	3		3		2	2
Analog output	-	-	-	2	-	-	1		1		2	2
Memory for min. / max. values	•	•					•		•		•	•
Memory size / recording duration (according to factory setting)	-	-	256 MB*10	-	256 MB*10	- 256 MB*10	8 MB / approx. 3 months (MID+ load profile: approx. 24 months)	64 MB / partition A: approx. 45 months, part. B: approx. 20 months			256 MB / approx. 95.95 months	256 MB / approx. 3.11 months
Clock	-	•					•		•		•	•
Integrated logic	-	Comparator					Comparator		Comparator		Jasic® (7 prg.)	Jasic® (7 prg.)
Web server / Email	-	-	-	• / •	-	• / -	-		-		• / •	• / •
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® Essentials	GridVis® Essentials					GridVis® Essentials	GridVis® Essentials	GridVis® Essentials	GridVis® Essentials	GridVis® Essentials	GridVis® Essentials
Interfaces												
RS-232	-	-					-		-		-	-
RS-485	•	•	•	•	•	•	•		•		•	•
USB	-	-	•	•	•	-	-		-		•	•
D-Sub 9 plug (Profibus)	-	-	•	•	-	-	-		-		•	•
M-Bus	-	-	-	•	-	-	-		-		-	-
Ethernet	-	-	-	-	•	- 2	-		-		•	•
Protocols												
Modbus RTU	•	•	•	•	•	•	•		•		•	•
Modbus gateway	-	-	•	•	•	-	-		-		•	•
Profibus DP V0	-	-	•	•	-	•	-		-		-	-
Modbus TCP/IP; Modbus RTU over Ethernet	-	-	-	-	•	- •*6	-		-	•	•	•
SNMP	-	-					-		-		•	•
OPC UA	-	-					-		-		-	-
BACnet IP	-	-	-	-	•*2	- •	-		-		•*2	•*2
Profinet	-	-	-	-	-	•	-		-		-	-

Vertical category labels:
- UMG 96-S2: **Entry-level universal energy measurement device**
- UMG 96RM: **Multifunctional power analyzer**
- UMG 96-PA: **Modularly expandable energy measurement device (MID)**
- RCM-EL module: **Modular expansion for the UMG 96-PA & UMG 96-PQ-L**
- 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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Janitza®

LOAD MANAGEMENT SOLUTIONS

Load management for the energy and mobility transition

Modern load management is becoming increasingly important in the context of the energy and mobility transition. Intelligent load management facilitates the avoidance of production downtimes, the development of energy strategies and the reduction of costs.

Load management engineering

Janitza electronics supports you from the analysis of your system environment to the integration of a modern load management approach. Let us assist you in optimizing your systems to achieve your energy goals. With our cross-manufacturer networking, we can integrate your existing production environment and ensure transparency.

Your advantages at a glance:

- Optimize your energy supply
- Detect and reduce peak loads
- One overarching system for all applications
- A uniform data basis for cost analysis
- Future-proof thanks to a wide range of expansion options

Your savings potential in figures:

- Reduction of expensive peak loads by up to 40%
- Reduction of charging costs for electric cars by up to 50%
- Increase the efficiency of your PV system in conjunction with an electric storage unit by up to 100%

Janitza electronics GmbH

EXPERTS IN ENERGY MEASUREMENT TECHNOLOGY

Only those who keep a close eye on their energy consumption can reduce costs and increase energy efficiency.

This is a particular focal point for Janitza electronics GmbH. The product range offered by Janitza provides complete system solutions for modern energy data management (e.g. ISO 50001), power quality, load management and residual current monitoring.

Alongside measurement devices and software, Janitza also offers the associated services – a complete solution that guarantees efficient energy management. This includes: Energy measurement technology, class A network quality analyzers compliant with standard EN 50160, energy management systems and many more. Alongside consultation and the development of technical solutions, Janitza also carries out commissioning, courses and training with customers and provides maintenance and support for our systems.

Janitza develops and manufactures the products (hardware and software) at their site in Lahnau, Germany – just as they always have.

SHORT PRODUCT OVERVIEW

Janitza®

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Brief overview of UMG measurement devices

Type	UMG 103-CBM (UL certified)	UMG 20CM	Module 20CM-CT6	UMG 604-PRO (UL certified) E	UMG 604-PRO EP	UMG 605-PRO (UL certified)	UMG 801 (UL certified)	Module 800-CT8-A (UL certified)	UMG 806	806-EC1	806-ED1	806-EI1
Part 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	14.02.025	14.02.016	14.02.019	14.02.020
Use in three-phase 4-conductor systems with grounded neutral conductor up to max.	277 V / 480 V AC	230 / 400 V AC	Current measurement only	277 / 480 V AC	277 / 480 V AC	277 / 480 V AC	347 / 600 V AC (UL); 480 / 830 V AC (IEC)	Current measurement only	230 / 400 V AC			
Use in three-phase 3-conductor systems ungrounded up to max.	-	-		480 V AC	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]	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	4			
Sampling frequency 50/60 Hz	5.4 kHz	20 kHz	60 kHz	20 kHz	20 kHz	20 kHz	51.2 kHz (V) / 25.6 kHz (A)	8.33 kHz	8 kHz			
Meter reading cycle as per 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	10 / 12			
Residual current inputs	-	20[*13]		-	-	-	4[*4]		1			
Current measuring channels	3	20[*13]	6–96 (max. 16 modules)[*11]	4	4	4	8	8–80 (max. 10 modules)	4			4[*12]
Thermistor input	-	-	-	1	1	1	4[*4]		1			
Harmonics current V / A	1st – 40th	1st – 63rd	1st – 63rd	1st – 40th	1st – 40th	1st – 63rd	1st–127th / 1st–63rd	1st, 3rd, 5th ... 15th	1st – 31th			
Distortion factor THD-U / THD-I in %	•	•	THD-I only	•	•	•	•	THD-I only	•			
Unbalance	-	-	-	•	•	•	•		•			
Short / long-term flicker	-	-	-	•	•	•	•		-			
Transients	-	-	-	> 50 µs	> 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%; 0.25%	0.2%; 0.2%	0.5%	0.2%; 0.2%			
IEC 61000-4-30	-	-	-	-	-	Class S	Class S		-			
Active energy class	0.5S (.../5 A)	1	2	0.5S (.../5 A)	0.5S (.../5 A)	0.5S (.../5 A)	0.25 (.../5 A)	0.5S (.../5 A)	0.5S (.../5 A)			
Digital inputs	-	-	-	2	2	2	4		1		4	
Digital / pulse output	-	2	-	2	2	2	4		1		2	2
Analog output	-	-	-	-	-	-	1		-			
Memory for min. / max. values	•	•	•	•	•	•	•	*9	•			
Memory size / recording duration (according to factory setting)	4 MB / approx. 3 months	768 KB / approx. 1 month	Only via UMG 20CM	128 MB / approx. 47.97 months	128 MB / approx. 47.97 months	128 MB / approx. 2.37 months	4 GB / no factory setting	*9	4 MB			
Clock	•	•	Only via UMG 20CM	•	•	•	•	*9	•			
Integrated logic	Comparator	Current limit values per channel	Current limit values per channel	Jasic® (7 prg.)	Jasic® (7 prg.)	Jasic® (7 prg.)	-		-			
Web server / Email	-	-	-	• / •	• / •	• / •	-		-			
APPs: Measured value monitor, EN 50160 & IEC 61000-2-4 Watchdog	-	-	-	-	-	-	*9		-			
Fault recorder function	-	-	-	•	•	•	•		-			
Peak load optimisation	-	-	-	•[*2]	•[*2]	•[*2]	*2		-			
Software for energy management and network analysis	GridVis® Essentials	GridVis® Essentials	GridVis® Essentials	GridVis® Essentials	GridVis® Essentials	GridVis® Essentials	GridVis® Essentials	GridVis® Essentials	GridVis® Essentials	GridVis® Essentials		
Interfaces												
RS-232	-	-	-	•	•	-	-		-			
RS-485	•	•	Only via UMG 20CM	•	•	•	•	*9	•			
USB	-	-	-	•	•	•	•		-			
D-Sub 9 plug (Profibus)	-	-	-	-	•	-	-		-			
M-Bus	-	-	-	-	-	•	-		-			
Ethernet	-	-	-	-	•	•	2	*9	•			•
Protocols												
Modbus RTU	•	•	Only via UMG 20CM	•	•	•	•	*9	•			
Modbus gateway	-	-	-	•	•	•	•	*10	-			•
Profibus DP V0	-	-	-	-	•	•	-		-			
Modbus TCP/IP, Modbus RTU over Ethernet	-	-	-	-	•	•	Modbus TCP/IP		•	•		
SNMP	-	-	-	-	-	•	•	*9	-			
OPC UA	-	-	-	-	-	-	•		-			
BACnet IP	-	-	-	•[*2]	•[*2]	•[*2]	-		-			•
Profinet	-	-	-	-	-	-	-		-	•		

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

SOFTWARE SOLUTIONS

GridVis® power grid monitoring software
In addition to the visualization of measurement data, the scalable GridVis® power grid monitoring software offers numerous functions for detailed analysis and configuration. Those functions include simple data exports, easy-to-create dashboards and standards-compliant reports. This makes GridVis® perfect for setting up standards-compliant monitoring systems in the application areas of energy management, power quality monitoring and residual current measurement.

GridVis® – Dashboard example

GridVis® Cloud energy monitoring portal
GridVis® Cloud offers a web-based tool for quick and easy measurement data preparation. No matter whether verifications need to be provided, electricity savings are required or the CO_2 balance must be calculated, the GridVis® Cloud helps to master these tasks. As a software service, it offers an energy monitoring tool that can be integrated into the daily work routine with very little effort. Use the Cloud Connector to automatically upload measurement data to the cloud, and then access the data via the dashboard.

GridVis® Cloud – Preconfigured dashboards

• : Included
- : Not included

*1 Other voltages are also available optionally
*2 Option
*3 Possible combinations of inputs and outputs:
  a) 5 digital outputs
  b) 2 digital outputs and 3 digital inputs
*4 Combined function: Optional analog / temperature / residual current input
*5 2 pulse outputs
*6 SNMP for internal Profinet communication only
*7 With module + 1 current measurement channel
*8 MID certified
*9 On the basic device
*10 To query the slave devices
*11 Combined function: Optionally analog or residual current
*12 These are 4...20 mA signal inputs
*13 289 / 500 V AC for MID+ models
*14 Applies to part no. 52.36.021 and 52.36.025
*15 Partition A: approx. 106 months, partition B: approx. 26 months
*16 approx. 2 months

Comment: For detailed technical information, please refer to the respective operating manuals and the Modbus address lists.

OVERVIEW OF GridVis® EDITIONS

GridVis® Essentials – free entry-level model
- Device configuration
- Graph function
- Device overview
- Event browser
- Basic data exports
- RCM data exports

GridVis® Essentials

GridVis® Standard – additional functions beyond GridVis® Essentials
- Service
- Logic
- Automation
- Database management
- Device monitoring
- User management
- Online recorder
- Widget basic package
- Dashboards & templates
- PQ data exports
- EnMS data exports
- CSV data import
- MSCONS data import
- REST API

GridVis® Standard

GridVis® Expert – full functionality beyond GridVis® Standard:
- Active Directory
- Alarm management
- Widget enhancement
- Sankey diagram
- Key performance indicators (KPI)
- Report editor
- Modbus devices from third party suppliers
- OPC UA client
- Comtrade data exports
- MSCONS data export

GridVis® Expert