Janitza®

Brief overview of UMG measurement devices

	UMG 103-CBM	UMG 20CM	Module 20CM-CT6	UMG 604-PRO	UMG 605-PRO	UMG 801	Module 800-CT8-A	UMG 806	Module 806-EC1/ED1/EI1
Type	UMG 103-CBM (UL certified)	UMG 20CM	Module 20CM-CT6	UMG 604-PRO (UL certified) E	UMG 604-PRO (UL certified) EP	UMG 605-PRO (UL certified)	UMG 801 (UL certified)	Module 800-CT8-A (UL certified)	UMG 806	UMG 806 Modules 806-EC1	UMG 806 Modules 806-ED1	UMG 806 Modules 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	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	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 frequency 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			
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			
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 current V / A	1st – 40th	1st – 63th	1st – 63th	1st – 40th	1st – 63th	1st–127th / 1st–63th	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	•			-			
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%			
IEC 61000-4-30	-	-	-	-	Class S	-			-			
Active energy class	0.5S (.../5 A)	1	2	0.5S (.../5 A)	0.5S (.../5 A)	0.2S (.../5 A)	0.5S (.../5 A)		0.5S (.../5 A)			
Digital inputs	-	-	-	2	2	4			-		4	
Digital / pulse output	-	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. 2.37 months	4 GB / no factory setting			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.)	-			-			
Web server / Email	-	-	-	• / •	• / •	-			-			
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®-Essential	GridVis®-Essential	GridVis®-Essential	GridVis®-Essential	GridVis®-Essential	GridVis®-Essential	GridVis®-Essential		GridVis®-Essential		GridVis®-Essential	
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	*9		-	•		
SNMP	-	-	-	•	•	-			-	•		
OPC UA	-	-	-	-	-	•	*9		-			
BACnet IP	-	-	-	•*2	•*2	-			-			
Profinet	-	-	-	-	-	-			-			

Compact energy analyzer

Multi-channel operating current and residual current monitoring device

Modular expansion for the UMG 20CM

Functionally expandable network analyzer

Power quality analyzer (Class S according to IEC 61000-4-30)

Modularly expandable network analyzer

Modular expansion for the UMG 801

Modularly expandable universal measurement device

Modular expansions for the UMG 806

- • : 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 operating 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.

Brief overview of UMG measurement devices

Janitza®

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	52.22.062	52.22.066	52.22.090	52.32.001 *1	52.32.004 *8	52.36.001 *1	52.36.021 *1	52.36.005	52.36.025	52.32.010	52.26.001	52.17011
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	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	10 / 12
Residual current inputs	-	-	-	-	2	-	2	-		-				2	2	2
Current measuring channels	3	3	4	3	4	4	4	3*7		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)	0.5S (.../5 A)						0.2S (.../5 A)		0.2S (.../5 A)					0.2S (.../5 A)	0.2S (.../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	-	-	-	-	-	-	-	1		1					-	-
Memory for min. / max. values	•	•						•		•					•	•
Memory size / recording duration (according to factory setting)	-	-	256 MB*16	-	256 MB*15	256 MB*16	-	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®-Essential	GridVis®-Essential						GridVis®-Essential		GridVis®-Essential		GridVis®-Essential			GridVis®-Essential	GridVis®-Essential
Interfaces																
RS-232	-	-						-		-					-	-
RS-485	•	•	•	-	•	•	•	•		•					•	•
USB	-	-	•	-	-	•	-	-		-					-	-
D-Sub 9 plug (Profibus)	-	-	•	-	-	-	-	-		-					•	•
M-Bus	-	-	-	•	-	-	-	-		-					-	-
Ethernet	-	-	-	-	•	-	2	-		-				•	•	•
Protocols																
Modbus RTU	•	•	•	-	•	•	•	•		•					•	•
Modbus gateway	-	-	-	-	•	-	-	-		-				•	•	•
Profibus DP V0	-	-	•	-	-	-	-	-		-					•	•
ModbusTCP/IP, Modbus RTU over Ethernet	-	-	-	-	•	-	•	-		-				•	•	•
SNMP	-	-	-	-	•	-	-*6	-		-					•	•
OPC UA	-	-	-	-	-	-	-	-		-					-	-
BACnet IP	-	-	-	-	•*2	-	-	-		-					•*2	•*2
Profinet	-	-	-	-	-	-	•	-		-					-	-

Entry-level universal energy measurement device

Multifunctional power analyzer

Modularly expandable energy measurement device (MID)

Modular expansion for the UMG 96-PA & UMG 96-PQ-L

RCM-EL module

Multifunctional power quality analyzer

Certified power quality analyzer (Class A according to IEC 61000-4-30)

POWER QUALITY SOLUTIONS

Improvement of power quality
Power quality as well as supply reliability are of great importance. Highly sensitive devices and processes are heavily dependent on power quality being clearly defined. Ensuring stable processes and an adequate power supply – despite the increasing number of devices that generate grid distortions – makes measures to improve power quality a necessity.

Janitza electronics offers a comprehensive package for improving power quality:
- Power factor correction in both the inductive and the capacitive areas
- Dynamic power factor correction
- Active and passive harmonics filters

Rapid amortization due to:
- Reduction of reactive power and operating cost savings
- Reduction of harmonics currents Network balancing between phases
- Reduction of transients and voltage dips
- Compensation for fast switching operations
- Reduction of switching peaks

Reduction of: Maintenance costs, Costs due to loss of production

GridVis® SOFTWARE

Energy management, power quality, residual current monitoring:
Visualize, analyze, alert, document

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).

Connectivity
Whether OPC UA, REST API or CSV. We offer many options for data import & export as well as data access. An open and future-proof system.

Network analysis & Evaluation
Analyze and evaluate measurement data. Use numerous tools such as statistics, charts, heatmaps, Sankey diagrams and key performance indicators.

Safety & Alarm management
Monitor limit values of measured variables, consumption data, residual currents and device communication. Reliable alerting via email and web interface.

Visualization & Documentation
Visualization according to your needs. Create dashboards quickly and easily without programming knowledge and use the report editor for customized reports.

Dashboard example