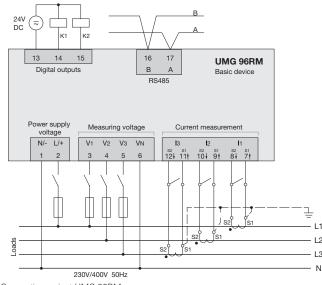


## Typical connection



Connection variant UMG 96RM

The illustration shown here is an example. Further connection diagrams are available on request or can be viewed on our homepage.



## Device overview and technical data

	UMG 96RM	UMG 96RM-M	UMG 96RM-EL	UMG 96RM-CBM	UMG 96RM-P
Item number	52.22.035	52.22.039	52.22.040	52.22.038	52.22.037
Item number (ETL)*1	52.22.031	-	-	52.22.032	52.22.034
Interfaces	RS485	M-Bus	Ethernet	RS485, USB	RS485, Profibus, USB
Protocols					
Modbus RTU	•	-	-	•	•
ModbusTCP	-	-	•	-	-
Profibus DP V0	-	-	-	-	•
M-Bus	-	•	-	-	-
DHCP	-	-	•	-	-
ICMP (Ping)	-	-	•	-	-
Measured data recording					
Current measurement channel	3	3	3	4	4
Memory (Flash)	-	-	-	256 MB	256 MB
Battery	-	-	-	Type VARTA CR1/2AA, 3 V, Li-Mn	Type VARTA CR1/2AA, 3 V, Li-Mn
Clock	-	-	-	•	•
Digital inputs and outputs					
Digital inputs	-	-	-	4	4
Digital outputs (as switch or pulse output)	2	2	-	6	6
Mechanical properties					
Device dimensions in mm (H x W x D)*2	96 x 96 x approx. 48	96 x 96 x approx. 48	96 x 96 x approx. 48	96 x 96 x approx. 78	96 x 96 x approx. 78

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

<sup>• =</sup> included -= not included

<sup>\*</sup>¹The Intertek-ETL sign is well respected and widely accepted in the USA and Canada. It serves as verification of compliance with the relevant standards, e.g. UL, CSA, NEC, NFPA, NSF, ANSI, NOM. Further information on ETL can be found at http://www.intertek.de/elektronik/etl-zeichen/. Source: www.intertek.de

<sup>\*2</sup> Accurate device dimensions can be found in the operation manual.

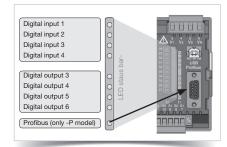


Fig.: LED status bar for the inputs and outputs (UMG 96RM-CBM and UMG 96RM-P)



Fig.: Battery insertion on the rear (UMG 96RM-CBM and UMG 96RM-P)

Supply voltage AC '3 Supply voltage AC (ETL variants)' 20 300 V DC Supply voltage AC (ETL variants)' 4 Supply voltage DC (ETL variants)' 4 Supply voltage measurement 7 Accuracy voltage measurement 8 Accuracy current measurement 9 Accuracy current measurement 9 Accuracy current measurement 9 Accuracy current measurement 9 Accuracy voltage measurement 9 Accuracy voltage measurement 9 Accuracy voltage measurement 9  Institute of measurement 9  Institute of measurement 9  Institute of Power (Accuracy voltage) 1  Institute of Voltage, frequency 9  Active, reactive and apparent power / total and per phase 9  Institute of Voltage, frequency 9  Institute of Voltage, positive, zero and negative sequence component 9  Institute of Voltage, positive, zero and negative sequence component 9  Institute of Voltage indication 9  Institute of Voltage indication 9  Institute of Institute of Institute 19  Institute of Voltage indication 9  Institute of Institute 19  Institute of Voltage indication 9  Institute of Voltage indi
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Voltage inputs  Password protection  Software GridVis®-Basic*5  Online and historic graphs  L1, L2, L3 + N  •  Software GridVis®-Basic*5  •
Password protection  Software GridVis®-Basic*5  Online and historic graphs  •
Software GridVis®-Basic*5 Online and historic graphs
Online and historic graphs •
Manual reports (energy, power quality)
Topology views •
Manual read-out of the measuring devices
Graph sets •
Programming / threshold values / alarm management
Comparator (2 Groups with 3 comparators each)
Technical data
Type of measurement Constant true RMS Up to 40th harmonic
Nominal voltage, three-phase, 4-conductor (L-N, L-L) 277 / 480 V AC
Nominal voltage, three-phase, 3-conductor (L-L) 480 V AC

## Networks

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

- $\bullet$  = included -= not included
- \*3 Relates exclusively to item numbers 52.22.035, 52.22.037, 52.22.038, 52.22.039 and 52.22.040.
  \*4 Relates exclusively to ETL marked devices with item numbers 52.22.031, 52.22.032, 52.22.033 and 52.22.034.

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<sup>\*5</sup> Optional additional functions with the packages GridVis®-Professional, GridVis®-Enterprise and GridVis®-Service.

## UMG 96RM

Measured voltage input			
Overvoltage category	300 V CAT III		
Measured range, voltage L-N, AC (without potential transformer)	10 300 Vrms		
Measured range, voltage L-L, AC (without potential transformer)	18 520 Vrms		
Resolution	0.01 V		
Impedance	4 MOhm / phase		
Frequency measuring range	45 65 Hz		
Power consumption	approx. 0.1 VA 21.33 / 25.6 kHz		
Sampling frequency per channel (50 / 60 Hz)	21.33 / 25.6 KHZ		
Measured current input  Rated current	5 A		
Resolution	0.1 mA		
Measurement range	0.001 6 Amps		
Overvoltage category	300 V CAT II		
Measurement surge voltage	2 kV		
Power consumption	approx. 0.2 VA (Ri = 5 MOhm)		
Overload for 1 sec.	120 A (sinusoidal)		
Sampling frequency per channel (50 / 60 Hz)	21.33 / 25.6 kHz		
Digital inputs and outputs			
Digital inputs*6	2011		
Maximum counting frequency	20 Hz		
Input signal pet present	18 28 V DC (typical 4 mA) 0 5 V DC, current < 0.5 mA		
Input signal not present  Digital outputs*7	o o v Do, current < 0.5 IIIA		
Switching voltage	max. 60 V DC, 33 V AC		
Switching current	max. 50 mA Eff AC / DC		
Response time	10 / 12 periods + 10 ms		
Pulse output (energy pulse)	max. 50 Hz		
Maximum cable length	up to 30 m unscreened, from 30 m screened		
Mechanical properties			
Weight	approx. 0.3 kg		
Protection class per EN 60529	Front: IP40; Back: IP20		
Assembly per IEC EN 60999-1 / DIN EN 50022	Front panel installation		
Cable cross section	201.05.2		
Supply voltage Current measurement	0.2 to 2.5 mm <sup>2</sup> 0.2 to 2.5 mm <sup>2</sup>		
Voltage measurement	0.08 to 4.0 mm <sup>2</sup>		
Environmental conditions	0.00 to 4.0 mm		
Temperature range	Operation: K55 (-25 +70 °C)		
Relative humidity	Operation: 0 to 90 % RH		
Operating height	0 2000 m above sea level		
Degree of pollution	2		
Installation position	user-defined		
Electromagnetic compatibility			
Electromagnetic compatibility of electrical equipment	Directive 2004/108/EC		
Electrical equipment for use within certain 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	IFO/FN 04220 4		
Class A: Industrial environment Electrostatic discharge	IEC/EN 61326-1 IEC/EN 61000-4-2		
Voltage dips	IEC/EN 61000-4-2		
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	ETL variants available		
Firmware			
Firmware update	Update via GridVis® software. Firmware download (free of charge) from the websit http://www.janitza.com/downloads		

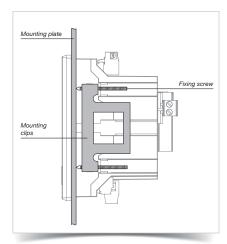


Fig.: The fastening into a switchboard is implemented via the side-mounted fastening clamps (UMG 96RM-P / UMG 96RM-CBM)

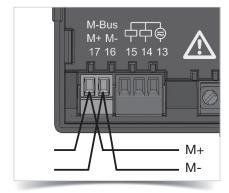


Fig.: M-Bus interface with 2-pole plug contact



Fig.: 2-pole plug contact with cable connection (cable type:  $2\times0.75\ mm^2$ ) via twin core end sheathes

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

- $\bullet$  = included -= not included
- \*6 The information relates exclusively to the measurement devices UMG 96RM-CBM and UMG 96RM-P.
  \*7 The information relates exclusively to the measurement devices UMG 96RM, UMG 96RM-M, UMG 96RM-CBM and UMG 96RM-P.96RM-P.