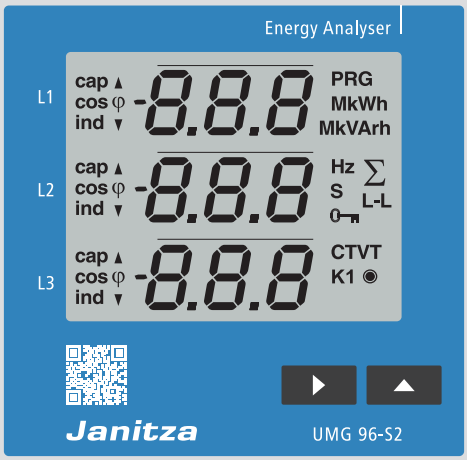
Smart Energy & Power Quality Solutions



Energy Analyzer

UMG 96-S2

Datasheet

Doc. no. 2.062.024.1.c 03/2020

Janitza®

USE & FUNCTION

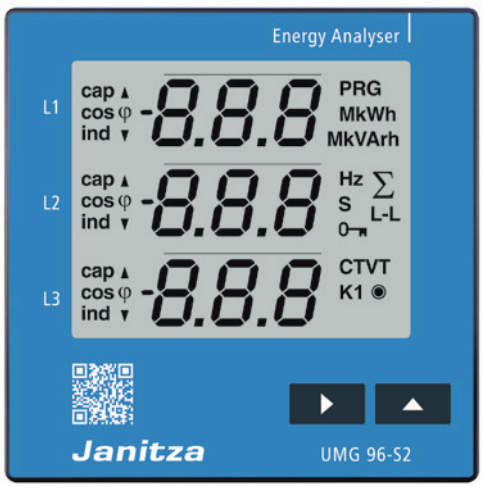
Energy Analyzer UMG 96-S2

Essential functions of the UMG 96-S2:

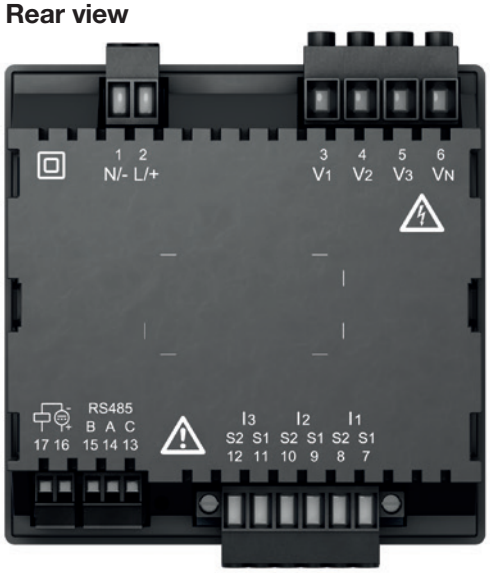
- 3 voltage measurements, 230/400 V, 300 V CAT III.
- 3 current measurements (via current transformer).
- RS485 interface.
- 1 digital output.
- Integrated front panel unit with the dimensions 96 x 96 mm.
- Connection via pluggable screw terminals.
- Operation via 2 keys.
- Password protection.

DEVICE VIEWS

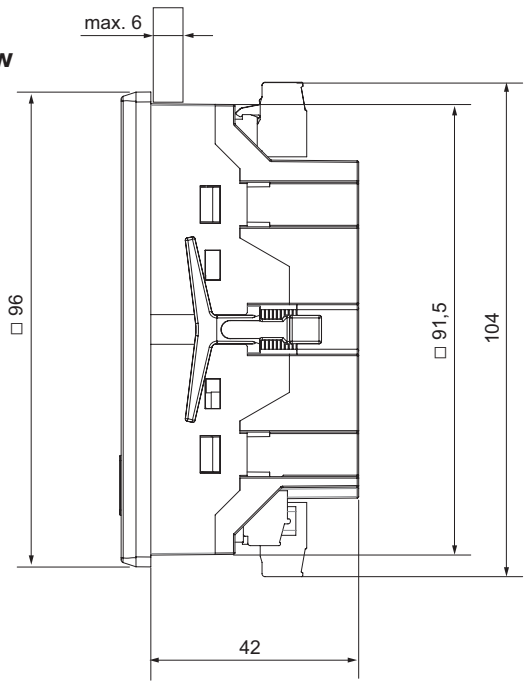
Front view



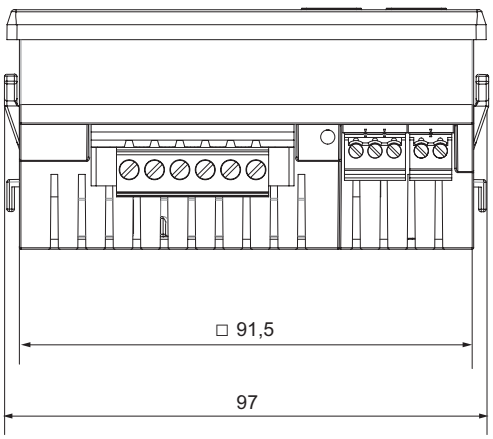
Rear view



Side view



View from below



Cut-out size: $92^{+0,8}$ mm x $92^{+0,8}$ mm.

TECHNICAL DATA

General information	
Net weight (with attached connectors)	Approx. 250 g (0.55 lb)
Packaging weight (including accessories)	Approx. 500 g (1.10 lb)
Impact resistance	IK07 according to IEC 62262

Transport and storage The following information applies to devices which are transported and stored in the original packaging.	
Free fall	1 m (39.37 in)
Temperature	K55, -25 °C (-13 °F) up to +70 °C (158 °F)
Relative humidity	0 to 90% RH

Ambient conditions during operation	
Use the UMG 96-S2 in a weather-protected, stationary application. Protection class II in accordance with IEC 60536 (VDE 0106, Part 1).	
Operating temperature range	K55, -10 °C (14 °F) to +55 °C (131 °F)
Relative humidity	0 to 75% RH
Operating altitude	0 .. 2000 m (1.24 mi) above sea level
Degree of pollution	2
Installation position	discretionary
Ventilation	no external ventilation required
Protection against foreign bodies and water - Front - Rear - Front side with sealing	 IP40 i.a.w. EN60529 IP20 i.a.w. EN60529 IP54 i.a.w. EN60529

Supply voltage	
Nominal range	AC 90 V - 265 V (50/60 Hz) or DC 90 V - 250 V, 300 V CATIII
Operating range	+-10% of nominal range
Power consumption	max. 1.5 VA / 0.5 W
Internal fuse, not exchangeable	Type T1A / 250 VDC / 277 VAC according to IEC 60127
Recommended overcurrent protection device for the line protection	6-16 A (Char. B, IEC-/UL approval)

Voltage measurement	
3-phase 4-conductor systems with nominal voltages up to	230 V/400 V (+-10%) according to IEC
Overvoltage category	300 V CAT III
Measurement voltage surge	4 kV
Fuse for the voltage measurement	1 - 10 A (with IEC/UL approval)
Measuring range L-N	0[1)] .. 300 Vrms (max. overvoltage 400 Vrms)
Measuring range L-L	0[1)] .. 425 Vrms (max. overvoltage 620 Vrms)
Measurement range exceedance L-N	U_{L-N} > 300 Vrms
Resolution	0.01 V
Crest factor	1.9 (related to the measurement range)
Impedance	3 MΩ/phase
Power consumption	Approx. 0.1 VA
Sampling frequency	8 kHz
Frequency of the basic oscillation - resolution	 45 Hz .. 65 Hz 0.01 Hz

1) The device only determines the measured values if voltage L1-N is greater than 20 Veff (4-conductor measurement) or voltage L1-L2 is greater than 34 Veff (3-conductor measurement) on voltage measurement input V1.

Current measurement	
Rated current	x/1 and x/5 A
Metering range	0.005 .. 6 Arms
Measurement range exceedance	I > 7 Arms
Crest factor (based on the rated current)	2
Resolution	1 mA (display 0.01 A) at ../5 A 1/4 mA at ../1 A
Overvoltage category	300 V CAT II
Measurement voltage surge	2 kV
Power consumption	approx. 0.2 VA (Ri=5 mΩ)
Overload for 1 s	60 A (sinusoidal)
Sampling frequency	8 kHz

Serial interface	
RS485 - Modbus RTU/slave	9.6 kbps, 19.2 kbps, 38.4 kbps

Digital output 1 digital output, semiconductor relay, not short-circuit proof.	
Switching voltage	max. 60 V DC
Switching current	max. 50 mAeff DC
Pulse output (energy pulse)	Max. 12.5 Hz

Terminal connection capacity (supply voltage) Connectable conductor (Connect only one conductor per terminal!):	
Single core, multi-core, fine-stranded	0.2 - 4 mm², AWG 28-12
Cable end sleeve (not insulated)	0.2 - 4 mm², AWG 26-12
Cable end sleeve (insulated)	0.2 - 2.5 mm², AWG 26-14
Tightening torque	0.4 - 0.5 Nm (3.54 - 4.43 lbf in)
Stripping length	7 mm (0.2756 in)

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Single core, multi-core, fine-stranded	0.2 - 4 mm², AWG 28-12
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Terminal connection capacity (serial interface)	
Single core, multi-core, fine-stranded	0.2 - 1.5 mm², AWG 28-16
Cable end sleeve (not insulated)	0.2 - 1.5 mm², AWG 26-16
Cable end sleeve (not insulated)	0.2 - 1.5 mm², AWG 26-16
Tightening torque	0.2 - 0.25 Nm (1.77 - 2.21 lbf in)
Stripping length	7 mm (0.2756 in)

Terminal connection capacity (digital interface)	
Single core, multi-core, fine-stranded	0.2 - 1.5 mm², AWG 28-16
Cable end sleeve (not insulated)	0.2 - 1.5 mm², AWG 26-16
Cable end sleeve (not insulated)	0.2 - 1.5 mm², AWG 26-16
Tightening torque	0.2 - 0.25 Nm (1.77 - 2.21 lbf in)
Stripping length	7 mm (0.2756 in)

FUNCTION CHARACTERISTICS

Function	Symbol	Accuracy class		Metering range	Display range
Total active power	P	0.5 [5]	(IEC61557-12)	0 W .. 5.4 kW	0 W .. 999 GW *
Total reactive power	QA, Qv	1	(IEC61557-12)	0 var .. 5.4 kvar	0 var .. 999 Gvar *
Total apparent power	SA, Sv	0.5 [5]	(IEC61557-12)	0 VA .. 5.4 kVA	0 VA .. 999 GVA *
Total active energy	Ea	0.5 [5] 0.5S [5]	(IEC61557-12) (IEC62053-22)	0 Wh .. 999 GWh	0 Wh .. 999 GWh *
Total reactive energy	ErA, ErV	1	(IEC61557-12)	0 varh .. 999 Gvarh	0 varh .. 999 Gvarh *
Total apparent energy	EapA,EapV	0.5 [5]	(IEC61557-12)	0 VAh .. 999 GVAh	0 VAh .. 999 GVAh *
Frequency	f	0.05	(IEC61557-12)	45 Hz .. 65 Hz	45.00 Hz .. 65.00 Hz
Phase current	I	0.2	(IEC61557-12)	0.005 Arms .. 6 Arms	0 A .. 999 kA
Calculated neutral conductor current	INc	1.0	(IEC61557-12)	0.03 A.. 25 A	0.03 A .. 999 kA
Voltage	U L-N	0.2	(IEC61557-12)	10 Vrms..300 Vrms	0 V .. 999 kV
Voltage	U L-L	0.2	(IEC61557-12)	18 Vrms..620 Vrms	0 V .. 999 kV
Power factor	PFA, PFV	0.5	(IEC61557-12)	0.00 .. 1.00	0.00 .. 1.00
Short-term flicker, long-term flicker	Pst, Plt	-		-	-
Voltage dips (L-N)	Udip	-		-	-
Voltage swells (L-N)	Uswl	-		-	-
Transient voltage swells	Utr	-		-	-
Voltage interruptions	Uint	-		-	-
Voltage unbalance (L-N) [1]	Unba	-		-	-
Voltage unbalance (L-N) [2]	Unb	-		-	-
Voltage harmonics	Uh	Cl. 1	(IEC61000-4-7)	1 .. 15 (only odd)	0 V .. 999 kV
THD of the voltage [3]	THDu	1.0	(IEC61557-12)	0 % .. 999 %	0 % .. 999 %
THD of the voltage [4]	THD-Ru	-		-	-
Current harmonics	Ih	Cl. 1	(IEC61000-4-7)	1 .. 15 (only odd)	0 A .. 999 kA
THD of the current [3]	THDi	1.0	(IEC61557-12)	0 % .. 999 %	0 % .. 999 %
THD of the current [4]	THD-Ri	-		-	-
Mains signal voltage	MSV	-		-	-

1) In relation to the amplitude.
2) In relation to the phase and amplitude.
3) In relation to the mains frequency.
4) In relation to the effective value.
5) Accuracy class 0.5/0.5S with ../5A transformer.
Accuracy class 1 with ../1A transformer.

* If the max. total energy value is reached, the display “0” appears.

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