

UMG 96

Universal measurement device

optec
energie ist messbar

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Threshold value monitoring



Pulse outputs

Measuring accuracy

- Energy: Class 2
- Current .../1 A, .../5 A
- Voltage L - N: $\pm 1\%$

Networks

- TN-, TT-Networks

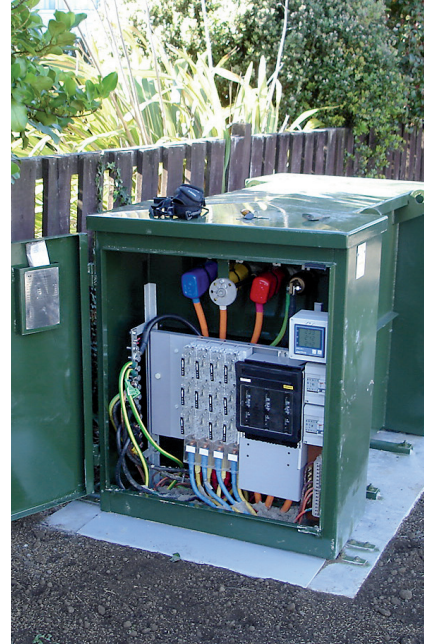
2 digital outputs (UMG 96)

- Pulse output kWh / kvarh
- Switch output



Areas of application

- Replaces analogue measurement devices
- Display and checking of electrical characteristics in energy distribution systems
- Limit value monitoring



Main features

Display selection and automatic display rotation

- Generous LCD display
- All measured values can be called up in factory setting
- Measured values that are not required can be hidden and displayed again

Operating hours counter

- The operating hours counter is active as soon as the device is switched on
- The time is measured with a resolution of 15 minutes
- Display in hours mode

Digital outputs for reactive or active energy

- Transmission of the reactive and active energy via digital outputs
- The active energy should be assigned to output 1 and the reactive energy to output 2

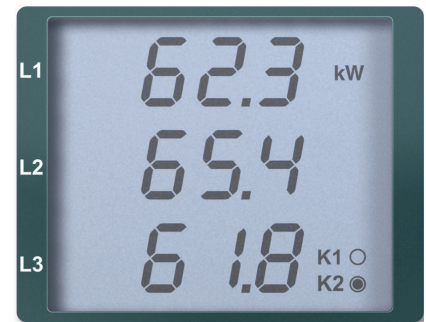


Fig.: Effective power, all three phases at a glance

Digital outputs for threshold values (UMG 96)

- Digital outputs also suitable for use as switch outputs
- Programming the digital outputs for threshold monitoring of measurement data
- Assignment of a measured value (threshold value) per switch output
- The associated output reacts in response to the value exceeding or dropping below the threshold value
- Transistor outputs

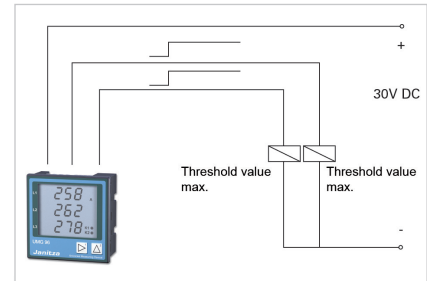


Fig.: Digital output for threshold value monitoring

Password

- 3-digit password protects against unauthorised changing of the programming and configurations
- Changes in the following program menus can only be implemented after entering the correct user password
- Password is not factory-programmed

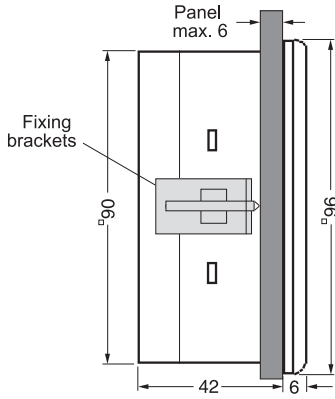


Fig.: Password protection

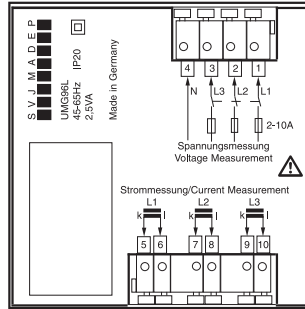


Dimension diagrams

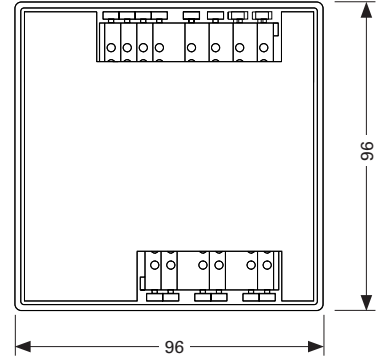
All dimensions in mm



Side view UMG 96L / UMG 96



Rear view UMG 96L

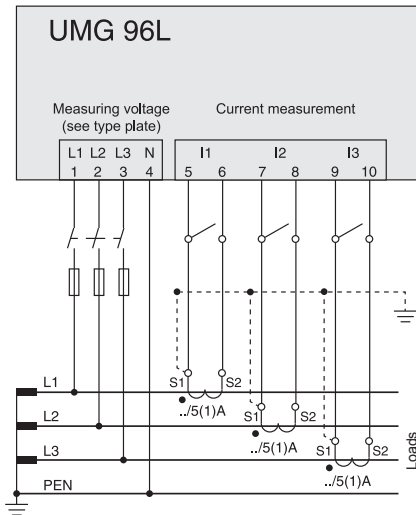


Rear view UMG 96

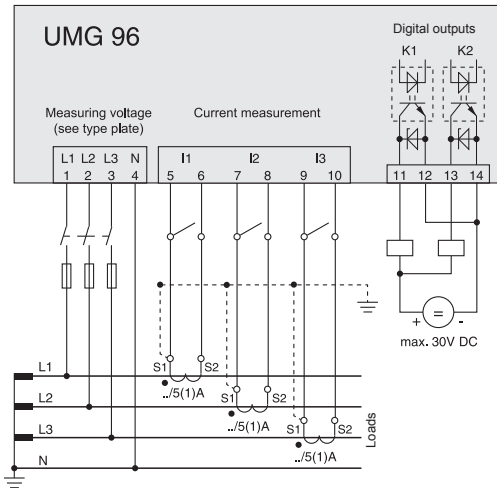
Cut out: 92^{+0.8} x 92^{+0.8} mm



Typical connection



UMG 96L



UMG 96 with 2 digital outputs



Device overview and technical data

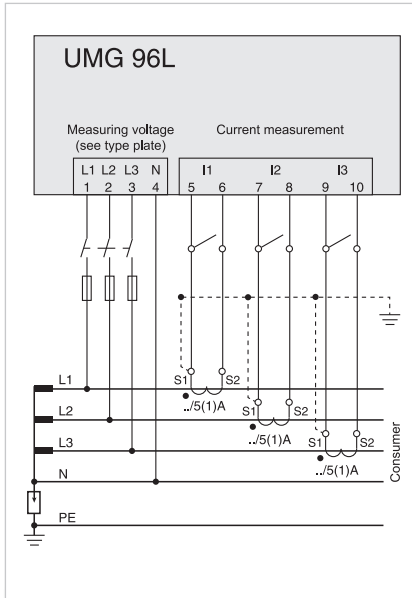


Fig.: Example connection via three current transformers (UMG 96L)

	UMG 96L	UMG 96
Item number	52.14.001	52.09.001
Measured voltage	230 / 400 V AC	275 / 476 V AC
Operating voltage	196 ... 255 V AC	196 ... 275 V AC
Measured voltage input		
Overvoltage category	300 V CAT III	300 V CAT III
Measured range, voltage L-N, AC (without potential transformer)	50 ... 255 V AC	50 ... 275 V AC
Measured range, voltage L-L, AC (without potential transformer)	87 ... 442 V AC	87 ... 476 V AC
Digital outputs		
Number of digital outputs	-	2
General		
Accuracy voltage measurement	1 %	1 %

General	
Use in low and medium voltage networks	•
Accuracy current measurement	1 %
Accuracy active energy (kWh, .../5 A)	Class 2
Number of measurement points per period	50
RMS - momentary value	
Current, voltage, frequency	•
Active, reactive and apparent power / total and per phase	•
Power factor / total and per phase	•
Energy measurement	
Active, reactive energy [Σ L1-L3]	•
Recording of the mean values	
Voltage, current / actual and maximum	•
Active, reactive and apparent power / actual and maximum	•
Frequency / actual and maximum	•
Other measurements	
Operating hours measurement	•

Technical data	
Measurement in quadrants	4
Networks	TN, TT
Measured voltage input	
Frequency measuring range	45 ... 65 Hz
Power consumption	approx. 0.1 VA / approx. 0.2 VA
Sampling frequency (50 Hz)	2.5 kHz / phase
Measured current input	
Rated current	1 / 5 A
Measurement range	0.005 ... 6 Arms
Overvoltage category	CAT III
Measurement surge voltage	4 kV
Power consumption	approx. 0.2 VA
Overload for 2 sec.	180 A (sinusoidal)
Sampling frequency (50/60 Hz)	2.5 / 3 kHz / Phase
Digital outputs^{*1}	
Switching voltage	max. 60 V DC, 5 – 24 V DC
Switching current	max. 50 mA Eff AC / DC
Pulse output (energy pulse)	max. 10 Hz
Maximum cable length	up to 30 m unscreened, from 30 m screened
Mechanical properties	
Weight	250 g
Device dimensions in mm (H x W x D)	96 x 96 x 48
Protection class per EN 60529	Front: IP40, Rear: IP20
Assembly per IEC EN 60999-1 / DIN EN 50022	Front panel installation
Connecting phase (U / I), Single core, multi-core, fine-stranded	0.08 to 2.5 mm ²
Terminal pins, core end sheath	1.5 mm ²

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

• = included - = not included

*1 Refers exclusively to the UMG 96.

Environmental conditions	
Temperature range	Operation: K55 (-10 ... +55 °C)
Relative humidity	Operation: 15 to 95 % (at 25 °C)
Operating height	0 ... 2,000 m above sea level
Degree of pollution	2
Installation position	user-defined
Electromagnetic compatibility	
Electromagnetic compatibility of equipment	Directive 89/336/EEC
Electrical equipment for use within certain voltage limits	Directive 73/23/EEC
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	
Industrial environment	IEC/EN 61326-1
Electrostatic discharge	IEC/EN 61000-4-2
Voltage dips	IEC/EN 61000-4-11
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

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