

U n i v e r s a l

M e a s u r i n g

D e v i c e

New!

UMG 96 L



**Digital,
interference resistant
and economical**



Janitza
electronics



Universal Measuring Device



Application

The UMG 96 L is a digital universal measuring device suitable for measurement and storage of electrical quantities in 50 Hz / 60 Hz mains. The measurement is designed for 3 phase systems with neutral conductor (TN and TT mains). One of its main features is the compact design (96 x 96 mm). Due to the high interference resistance the UMG 96L is suitable for the continuous, non-supervised operation.

Approximately 11 other devices, such as amperemeter, voltmeter, voltmeter-change-over, power meter (kW, kVA, kVar, cos-phi), real and reactive power meter (kWh, kVarh) and frequency meter would be necessary in order to achieve the functional variety of this universal measuring device.

For this reason the costs for planning, installation, wiring and storage are much lower. This means an interesting cost/efficiency relation compared to analogue devices.

This device is suitable for indication and control of electrical quantities in energy distribution equipments.

General operation

The three phase electronic measuring system measures and digitizes the effective values of voltage and currents in 50 Hz / 60 Hz mains. The supply voltage for the operation of UMG 96L is taken out from the measured voltage L1-N.

One random test is carried out each second. Interruptions of the measuring signal of more than one second will be properly recognized. The inserted microprocessor calculates the electrical quantities from the scanned values.

The power and the minimum and maximum values are stored every 15 minutes whereas the programming data are stored immediately in a non volatile storage (EEPROM). The scanning frequency for all measured values is calculated from the net frequency of phase L1. For a net frequency of 50 Hz the scanning frequency is 2,5 kHz and for a net frequency of 60 Hz the scanning frequency is 3,0 kHz.

Display

The well legible LCD display in connection with the function keys inform about the selected values (actual, lowest, peak and mean values). The LCD display of UMG 96 L is designed to indicate 3 measured values at once. The contrast of the LCD display can be adjusted by the user.

Selection of measured values and rotation

When the device leaves our premises all measured values are initially available. Measured values, which are not necessary can be suppressed and reactivated again.

An interval of 1 to 250 seconds can be set for display rotation. The display rotation can also be deactivated.

Bimetallic function

A common averaging time for the current measurement values L1, L2, L3 and N is programmable. Another common averaging time for the power measurement values real power, apparent power and reactive power can be programmed.

These values can be integrated for a selectable time of 5, 10, 30, 60, 300, 480 and 900 seconds and can be stored as highest mean value.

Operating hours counter

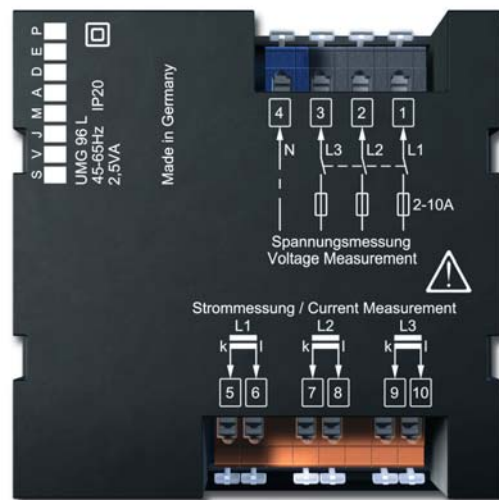
The operating hours counter is activated immediately after connecting the device and cannot be reset. The time is measured with a resolution of 15 minutes and indicated in hours.

Password

The user is able to protect the programming and configuration from unintentional change by entering a three digit user password.

Technical data

Overvoltage class	CAT III
Pollution degree	2
Operating ambient temperature	-10°C .. +55°C
Storage temperature	-20°C .. +70°C
Humidity	15 % to 95 % without dew
Mounting position	optional
Dimensions	w96 x h96 x d42 mm
Measuring voltage	196 - 255 L-N ² , 340 - 442 L-L ²
Frequency	45 .. 65 Hz
Current measurement	.. /5A (/1A)
Power consumption	approx. 0,2 VA
Minimum operating current	20 mA
Protection class	
- front	IP50 acc. to IEC 60529
- front incl. seal (option)	IP65 acc. to IEC 60529
- back side	IP20 acc. to IEC 60529



*2 also available for measuring voltage ranges : L-N 45...80 V / L-L 78...139 V and L-N 90...160V / L-L 156...277 V



Voltage L-L



cos (phi)

Display examples



Real power



Real energy consumption

Measured values

Quantity	Indication range	Measuring range at scale factor 1	L1 L2 L3			Sum	Lowest value	Mean value*1	Maximum value		Accuracy
									Mean value	Measured value	
Current 1/5A L1-L3	0,00 .. 9,99 kA	0,02 .. 6 A	●	●	●		●	●	●	+1 % rng	
Current , N	0,00 .. 9,99 kA	0,06 .. 18 A				●		●	●	+3 % rng	
Voltage L-N	0,0 .. 34 kV	196 .. 255 V AC*2	●	●	●		●		●	+1 % rng	
Voltage L-L	0,0 .. 60 kV	340 .. 442 V AC*2	●	●	●				●	+2 % rng	
Frequency (U)	45,0 .. 65,0 Hz		●							+1,5 % rdg	
Real power, sum,+/-	0,00 W .. 150 MW	1,8 W .. 2,4 kW	●	●	●	●	●	●	●	+1,5 % rng	
Apparent power, sum	0,00 VA .. 150 MVA	1,8 VA .. 2,4 kVA	●	●	●	●	●	●	●	+1,5 % rng	
Reactive power, sum	0,00 var .. 150 MVar	1,8 var .. 2,4 kvar	●	●	●	●	●	●	●	ind.+1,5 % rng	
cos phi	0,00 ind. .. 1,00 .. 0,00 kap.	0,00 kap. .. 1,00 .. 0,00 ind.	●	●	●	●				+3 % rng*4	
Real energy, consumption	0 .. 999.999.999 kWh					●				class 2 *3	
Reactive energy, inductive	0 .. 999.999.999 kvarh					●				class 2 *3	
Operating hours counter	0 .. 999.999.999 h									+2 min. per day	

rng: of measured range, rdg: of measured value

*1 Integration possible for a selectable time of 5, 10, 30, 60, 300, 480 and 900 seconds, *2 also available for measuring voltage ranges: L-N 45...80 V / L-L 78...139 V and L-N 90...160V / L-L 156...277 V

*3 Accuracy class acc. to, *4 The measured apparent power has to be in the range of 1 ... 100 %.

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