



UMG 604 – Power analyser

Communication

- Profibus (DP/ V0)
- Modbus (RTU, UDP, TCP, Gateway)
- TCP/IP
- BACnet (optional)
- HTTP (configurable homepage)
- FTP (file transfer)
- SNMP
- TFTP
- NTP (time synchronisation)
- SMTP (email function)
- DHCP

Interfaces

- Ethernet
- RS232
- RS485

Accuracy of measurement

- Energy: Class 0.5 S (... / 5 A)
- Current: 0.2 %
- Voltage: 0.2 %

Peak demand management (optional)

- Up to 64 switch-off stages

Power quality

- Harmonics up to 40th harmonic
- Short-term interruptions (> 20 ms)
- Transient recorder (> 50 μ s)
- Starting currents (> 20 ms)
- Unbalance
- Full wave effective value recording (up to 4.5 min.)

Networks

- IT, TN, TT networks
- 3 and 4-phase networks
- Up to 4 single-phase networks

Measured data memory

- 128 MByte Flash

Programming language

- Jasic®

2 digital inputs

- Pulse input
- Logic input
- State monitoring
- HT / LT switching
- Emax resetting

2 digital outputs

- Pulse output kWh / kvarh
- Switch output
- Threshold value output
- Emax output
- Logic output

(expandable via external I/O modules, see chapter 05, Industrial data communications)

Temperature measurement

- PT100, PT1000, KTY83, KTY84

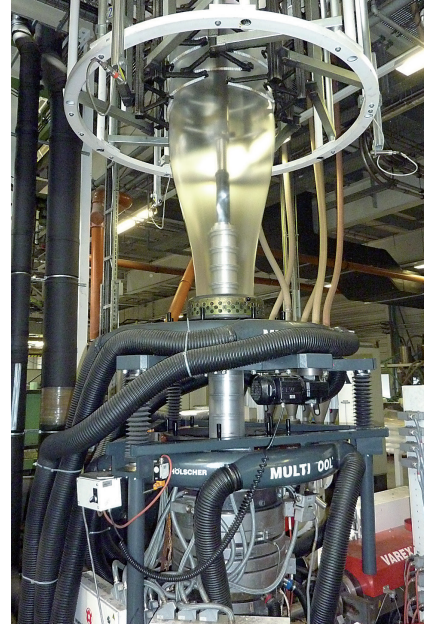
Network visualisation software

- GridVis®-Basic (in the scope of supply)

Areas of application



- Master device for energy management systems, (e.g. ISO 50001)
- Measurement, monitoring and checking of electrical characteristics in energy distribution systems
- Consumption data acquisition
- Monitoring of the power quality (harmonics, short-term interruptions, transients, starting currents, etc.)
- Measured value transducer for building management systems or PLC
- Control tasks e.g. depending on measured value or limit values being reached
- Peak demand management
- Ethernet gateway for subordinate measurement points
- Remote monitoring



Main features



Power quality

- Harmonics analysis up to 40th harmonic
- Unbalance
- Distortion factor THD-U /THD-I
- Measurement of positive, negative and zero sequence component
- Short-term interruptions (> 20 ms)
- Logging and storage of transients (> 50 µs)
- Start-up processes
- Fault recorder function
- Rotary field indication

DIN mounting rail (6TE):

Simple and cost-optimised installation

- Mounting on a 35 mm DIN rail
- Clear cost advantages in the switch cabinet construction through lower installation and connection effort
- Simple integration into the LVDB, in machinery construction, in installation subdistribution panel for building management systems, in IT and in data centres



Modern communications architecture via Ethernet

- Rapid, cost-optimised and reliable communication through integration into an existing Ethernet architecture
- Integration in PLC systems and building management systems
- High flexibility due to the use of open standards
- Simultaneous polling of interfaces possible

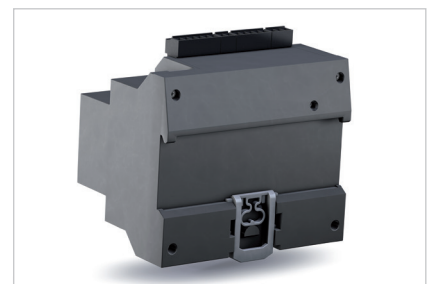


Fig.: DIN rail mounting (6TE)

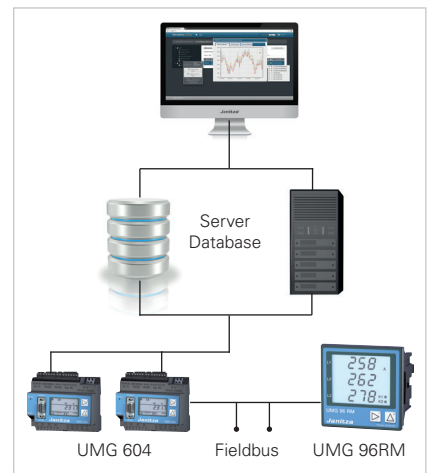


Fig.: Modern communication architecture



Ethernet-Modbus gateway

- Simple integration of Modbus-RTU devices into an Ethernet architecture through the Modbus gateway function
- Integration of devices with identical file formats and matching function codes possible via Modbus RTU interface



High-speed Modbus

- Fast and reliable data exchange via RS485 interface
- Speed up to 921.6 kB/s



Graphical programming

- Comprehensive programming options on the device, 7 programs simultaneously (PLC functionality)
- Jasic® source code programming
- Functional expansions far beyond pure measurement
- Complete APPs from the Janitza library

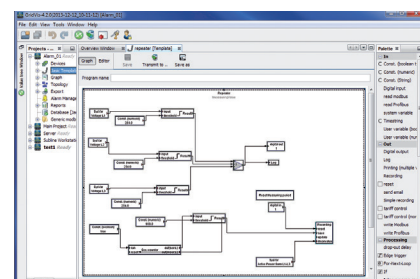


Fig.: Graphical programming



Convenient home page and email functions

- Information can be received conveniently by email and via the device homepage
- Access to powerful device homepage via web browser
- Online data, historical data, graphs, events and much more, is available direct from the homepage

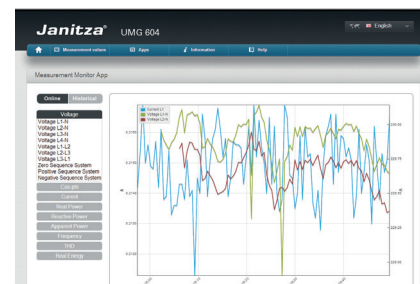


Fig.: Illustration of the online data via the device's own homepage



Large measurement data memory

- 128 MByte
- 5,000,000 saved values
- Recording range up to 2 years
- Recording freely configurable

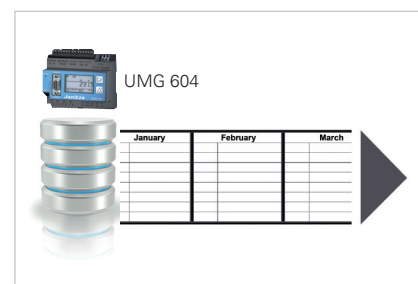
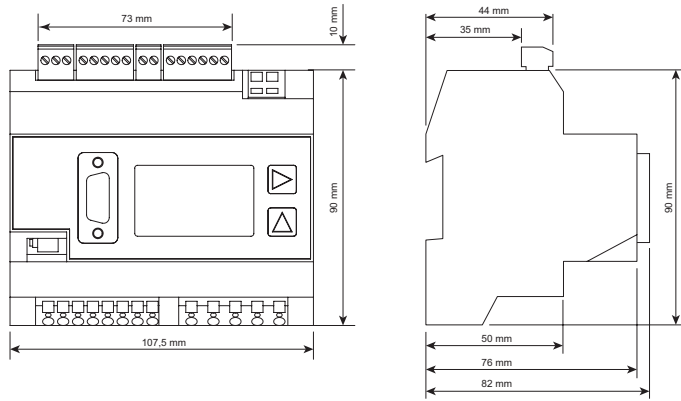


Fig.: Large measurement data memory



Dimension diagrams

All dimensions in mm

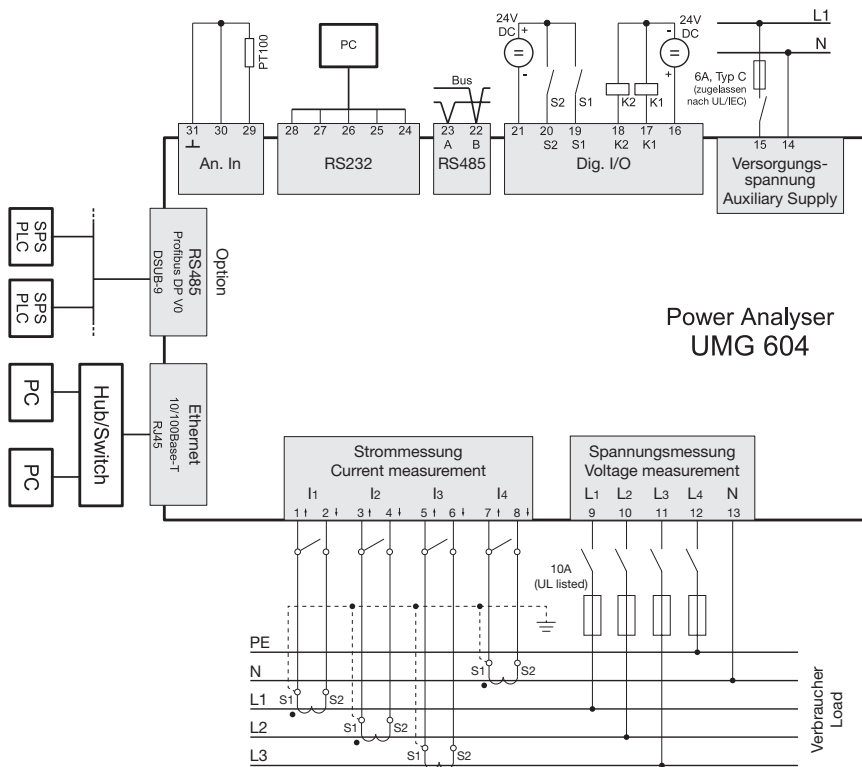


Front view

Side view



Typical connection





Device overview and technical data

	UMG 604E			UMG 604EP	
Item number	52.16.002	52.16.012	52.16.022	52.16.001	52.16.021
Item number (UL)	52.16.202	-	-	52.16.201	-
Supply voltage AC	95 ... 240 V AC	50 ... 110 V AC	20 ... 55 V AC	95 ... 240 V AC	20 ... 55 V AC
Supply voltage DC	135 ... 340 V DC	50 ... 155 V DC	20 ... 77 V DC	135 ... 340 V DC	20 ... 77 V DC
Communication					
Interfaces					
RS485: 9.6 – 921.6 kbps (Screw-type terminal)	•	•	•	•	•
RS232: 9.6 – 115.2 kbps (Screw-type terminal)	•	•	•	•	•
Profibus DP: Up to 12 Mbps (DSUB-9 plug)	-	-	-	•	•
Ethernet 10/100 Base-TX (RJ-45 socket)	•	•	•	•	•
Protocols					
Modbus RTU, Modbus TCP, Modbus RTU over Ethernet	•	•	•	•	•
Modbus Gateway for Master-Slave configuration	•	•	•	•	•
Profibus DP V0	-	-	-	•	•
HTTP (homepage configurable)	•	•	•	•	•
SMTP (email)	•	•	•	•	•
NTP (time synchronisation)	•	•	•	•	•
TFTP	•	•	•	•	•
FTP (File-Transfer)	•	•	•	•	•
SNMP	•	•	•	•	•
DHCP	•	•	•	•	•
TCP/IP	•	•	•	•	•
BACnet (optional)	•	•	•	•	•
ICMP (Ping)	•	•	•	•	•
Device options					
Emax function	52.16.080	52.16.080	52.16.080	52.16.080	52.16.080
BACnet communication	52.16.081	52.16.081	52.16.081	52.16.081	52.16.081

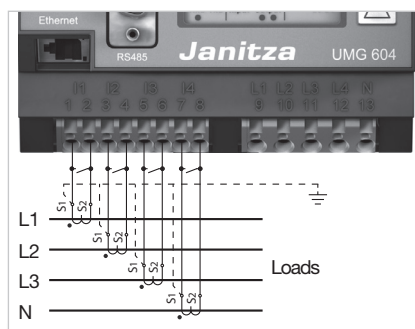


Fig.: Current measurement via current transformers

General	
Use in low and medium voltage networks	•
Accuracy voltage measurement	0.2 %
Accuracy current measurement	0.2 %
Accuracy active energy (kWh, .../5 A)	Class 0.5 S
Number of measurement points per period	400
Uninterrupted measurement	•
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 and apparent energy [L1,L2,L3, L4, Σ L1-L3, Σ L1-L4]	•
Number of tariffs	8
Recording of the mean values	
Voltage, current / actual and maximum	•
Active, reactive and apparent power / actual and maximum	•
Frequency / actual and maximum	•
Demand calculation mode (bi-metallic function) / thermal	•
Other measurements	
Clock	•
Weekly timer	Jasic®

Comment:

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

• = included - = not included

Power quality measurements	
Harmonics per order / current and voltage	1st – 40th
Harmonics per order / active and reactive power	1st – 40th
Distortion factor THD-U in %	•
Distortion factor THD-I in %	•
Voltage unbalance	•
Current and voltage, positive, zero and negative sequence component	•
Transients	50 µs
Error / event recorder function	•
Short-term interruptions	20 ms
Oscillogram function (waveform U and I)	•
Full wave effective values (U, I, P, Q)	•
Under and overvoltage recording	•
Measured data recording	
Memory (Flash)	128 MB
Average, minimum, maximum values	•
Measured data channels	8
Alarm messages	•
Time stamp	•
Time basis average value	freely user-defined
RMS averaging, arithmetic	•
Displays and inputs / outputs	
LCD display	•
Digital inputs	2
Digital outputs (as switch or pulse output)	2
Thermistor input (PT100, PT1000, KTY83, KTY84)	•
Voltage and current inputs	each 4
Password protection	•
Peak load management (optionally 64 channels)	•
Software GridVis®-Basic^{*1}	
Online and historic graphs	•
Databases (Janitza DB, Derby DB); MySQL, MS SQL with higher GridVis® versions)	•
Manual reports (energy, power quality)	•
Graphical programming	•
Topology views	•
Manual read-out of the measuring devices	•
Graph sets	•
Programming / threshold values / alarm management	
Application programs freely programmable	7
Graphical programming	•
Programming via source code Jasic®	•
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
Measurement in quadrants	4
Networks	TN, TT, IT
Measurement in single-phase/multi-phase networks	1 ph, 2 ph, 3 ph, 4 ph and up to 4 times 1 ph
Measured voltage input	
Overvoltage category	300 V CAT III
Measured range, voltage L-N, AC (without potential transformer)	10 ... 600 Vrms
Measured range, voltage L-L, AC (without potential transformer)	18 ... 1,000 Vrms
Resolution	0.01 V
Impedance	4 MOhm / phase
Frequency measuring range	45 ... 65 Hz
Power consumption	approx. 0.1 VA
Sampling frequency	20 kHz / phase
Transients	> 50 µs

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

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^{*1} Optional additional functions with the packages GridVis®-Professional, GridVis®-Enterprise and GridVis®-Service.

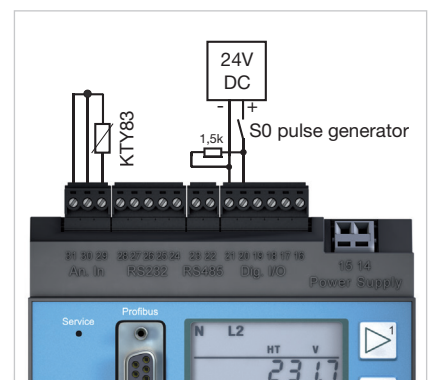
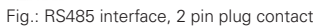
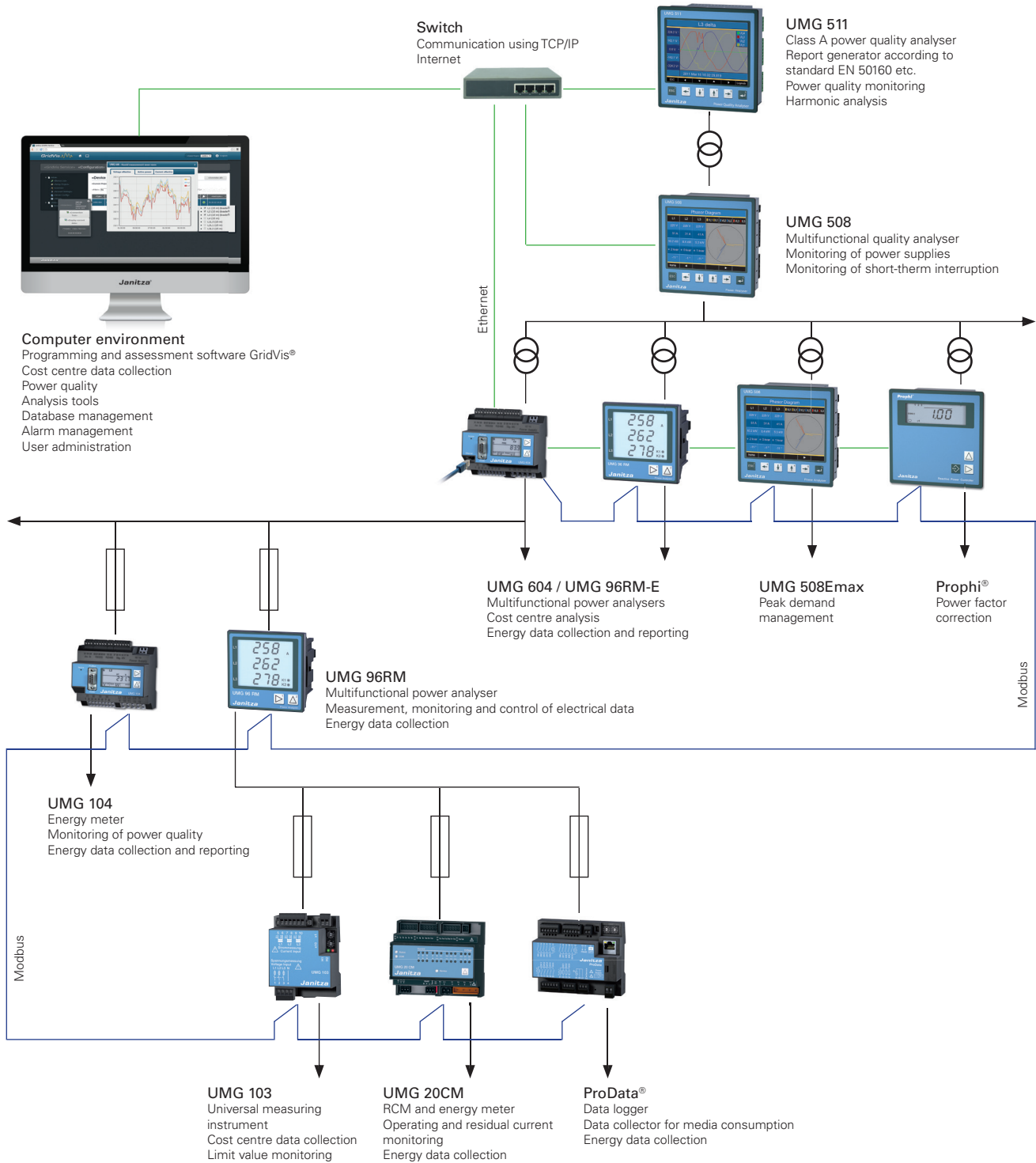


Fig.: Example temperature input (KTY83) and S0 pulse transducer



Comment:
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