Device overview and technical data

	UMG 604E			UMG 604EP	
Item number		**52.16.012**			
Item number (UL)	**52.16.202**	**-**	**52.16.222**	**52.16.201**	**52.16.221**
Supply voltage AC	95 ... 240 V AC	50 ... 110 V AC	20 ... 50 V AC	95 ... 240 V AC	20 ... 50 V AC
Supply voltage DC	135 ... 340 V DC	50 ... 155 V DC	20 ... 70 V DC	135 ... 340 V DC	20 ... 70 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					
BACnet communication	**52.16.081**	**52.16.081**	**52.16.081**	**52.16.081**	**52.16.081**

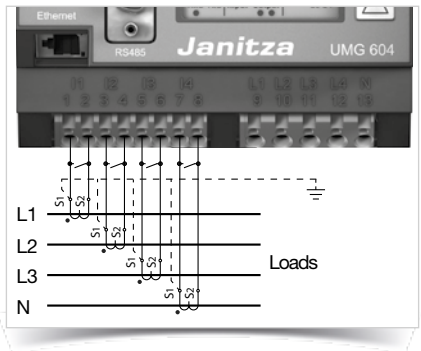

Fig.: Current measurement via current transformers

General	
Use in low and medium voltage networks	•
Accuracy voltage measurement	0.2 %
Accuracy current measurement	0.25 %
Accuracy active energy (kWh, .../5 A)	Class 0.5S
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, ∑ L1–L3, ∑ 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

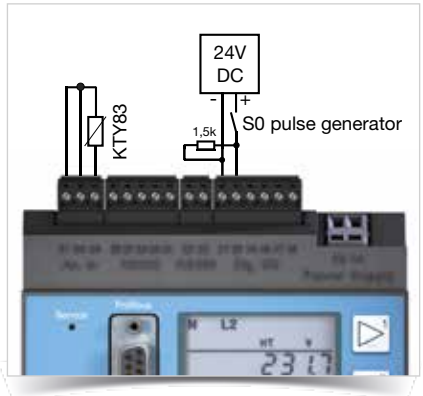

Fig.: Example temperature input (KTY83) and S0 pulse transducer

Comment:
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• = included - = not included

*1 Optional additional functions with the packages GridVis®-Professional, GridVis®-Service and GridVis®-Ultimate.

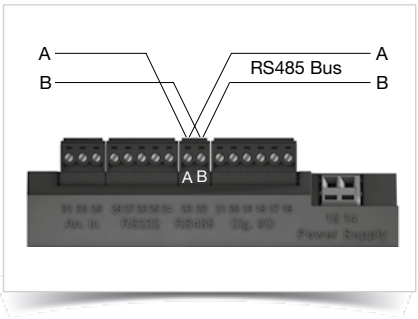

Fig.: RS485 interface, 2 pin plug contact

Measured current input	
Rated current	1 / 5 A
Resolution	1 mA
Measurement range	0.001 ... 8.5 Amps
Overvoltage category	300 V CAT III
Measurement surge voltage	4 kV
Power consumption	approx. 0.2 VA (Ri = 5 MOhm)
Overload for 1 sec.	100 A (sinusoidal)
Sampling frequency	20 kHz
Digital inputs and outputs	
Number of digital inputs	2
Maximum counting frequency	20 Hz
Input signal present	18 ... 28 V DC (typical 4 mA)
Input signal not present	0 ... 5 V DC, current < 0.5 mA
Number of digital outputs	2
Switching voltage	max. 60 V DC, 30 V AC
Switching current	max. 50 mA Eff AC / DC
Output of voltage dips	20 ms
Output of voltage exceedance events	20 ms
Pulse output (energy pulse)	max. 20 Hz
Maximum cable length	up to 30 m unscreened, from 30 m screened
Mechanical properties	
Weight	350 g
Device dimensions in mm (H x W x D)	90 x 107.5 x approx. 82
Battery	Type Lithium CR2032, 3 V
Protection class per EN 60529	IP20
Assembly per IEC EN 60999-1 / DIN EN 50022	35-mm DIN rail
Connecting phase (U / I), Single core, multi-core, fine-stranded Terminal pins, core end sheath	 0.08 to 2.5 mm² 1.5 mm²
Environmental conditions	
Temperature range	Operation: K55 (-10 ... +55 °C)
Relative humidity	Operation: 5 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 electrical equipment	Directive 2004/108/EC
Electrical appliances for application within particular 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	
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
RFI Field Strength 30 – 1,000 MHz	IEC/CISPR11/EN 55011
Radiated interference voltage 0.15 – 30 MHz	IEC/CISPR11/EN 55011
Safety	
Europe	CE labelling
USA and Canada	UL variants available
Firmware	
Firmware update	Update via GridVis® software. Firmware download (free of charge) from the website: http://www.janitza.com

Comment:
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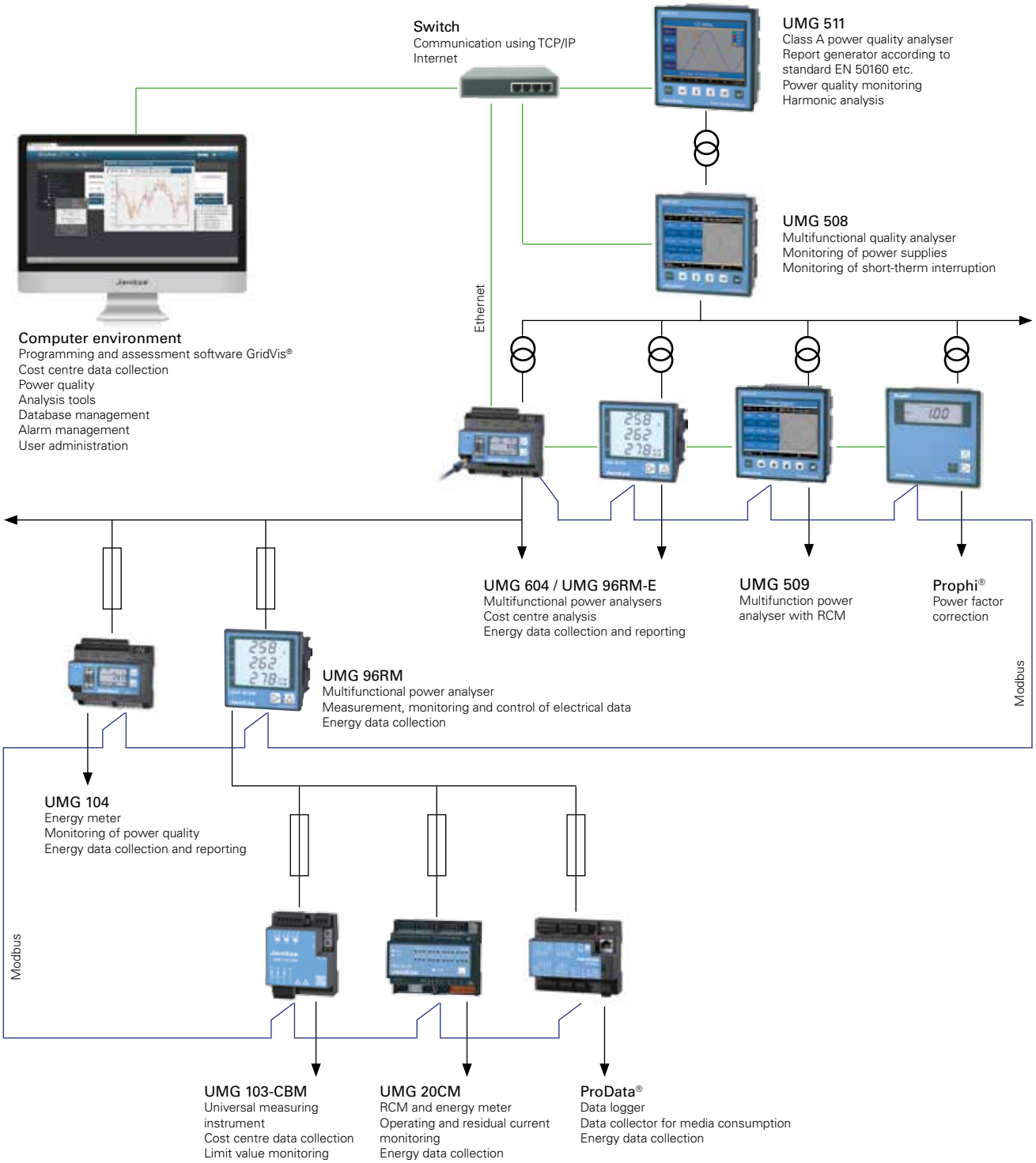
Switch
Communication using TCP/IP
Internet
UMG 511
Class A power quality analyser
Report generator according to standard EN 50160 etc.
Power quality monitoring
Harmonic analysis
UMG 508
Multifunctional quality analyser
Monitoring of power supplies
Monitoring of short-therm interruption
Ethernet
Computer environment
Programming and assessment software GridVis®
Cost centre data collection
Power quality
Analysis tools
Database management
Alarm management
User administration
UMG 604 / UMG 96RM-E
Multifunctional power analysers
Cost centre analysis
Energy data collection and reporting
UMG 509
Multifunction power analyser with RCM
Prophi®
Power factor correction
Modbus
UMG 96RM
Multifunctional power analyser
Measurement, monitoring and control of electrical data
Energy data collection
UMG 104
Energy meter
Monitoring of power quality
Energy data collection and reporting
Modbus
UMG 103-CBM
Universal measuring instrument
Cost centre data collection
Limit value monitoring
UMG 20CM
RCM and energy meter
Operating and residual current monitoring
Energy data collection
ProData®
Data logger
Data collector for media consumption
Energy data collection