UMD 913 – Measuring equipment for installation in a control board

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UMD 913 energy quality measurement systems with integrated disturbance recorder for professional network analysis

The UMD 913 is a high-performance, multi-functional, high-precision measuring instrument for installation on the front board. It measures 4-phase current and voltage in 4-quadrant mode, in class 0.05 and therefore the energy in class 0.2s.

Regardless of the processes the run in the energy systems, the UMD 913 network analysers register even the smallest disturbances or changes. All electrical energy supply parameters are recorded consistently and precisely. Detailed quality evaluations make even the smallest deviations visible and provide information on the causes of the disturbances. The exact time synchronisation of the measurement systems by means of NTP enables the merging of measurement data for area-wide monitoring of the entire supply network. For the analysis and documentation of network quality according to self-defined or international standards such as EN 50160, EN 61000-2-2, EN 61000-2-4 or EN 61000-2-12, the UMD 913 continuously records all network parameters in class A according to EN 61000-4-30. High memory capacities and effective compression methods enable long-term recordings of up to several years.

In addition to continuously recording all sizes relevant for network quality, the integrated disturbance recording module enables event-triggered recording of transient processes with sampling rates of up to 28.8 kHz.

Application:

The device is used for continuous monitoring of the voltage quality in accordance with EN 50160 in class A.

Standard

INPUTS 4U, 4I	MEASUREMENT U,I,P,Q	PF,cos,THD	+/- Wh,varh	HARMONICS 128	INPUTS RCM	ETH
BATTERY	FLASH 512 MB	STANDARDS class A IEC 61000-4-30	STANDARDS class 0.2S IEC 62053-22	STANDARDS IEC 61557-12	STANDARDS EN 50160	CURRENT INPUT X/5A
RS485	SUPPLY 230V	WEBSERVER	NTP	INPUTS/OUTPUTS 4xDIGI	USB	FIRMWARE GO

Optional

OUTPUTS 4xRELAY	2xOUTPUTS 0÷10V 0/4÷20mA	2xINPUTS 0/4÷20mA	INPUTS Pt100

Supply voltage		Mea-surement voltage	Diff. current meas.	Functions					Communication			Type	Item number
85 - 265 V AC 90 - 350 V DC		5 - 1470 V LL	Number	Digital I/O	Relay output	Analogue I/O	Pt100 input	Memory size in MB	Clock	RS485	Ethernet	USB		
•		•	2	4	-	-	-	512	•	•	•	•	UMD 913*	12.08.1109
•		•	2	4+1**	4	2/2	1	512	•	•	•	•	UMD 913G*	12.52.1109

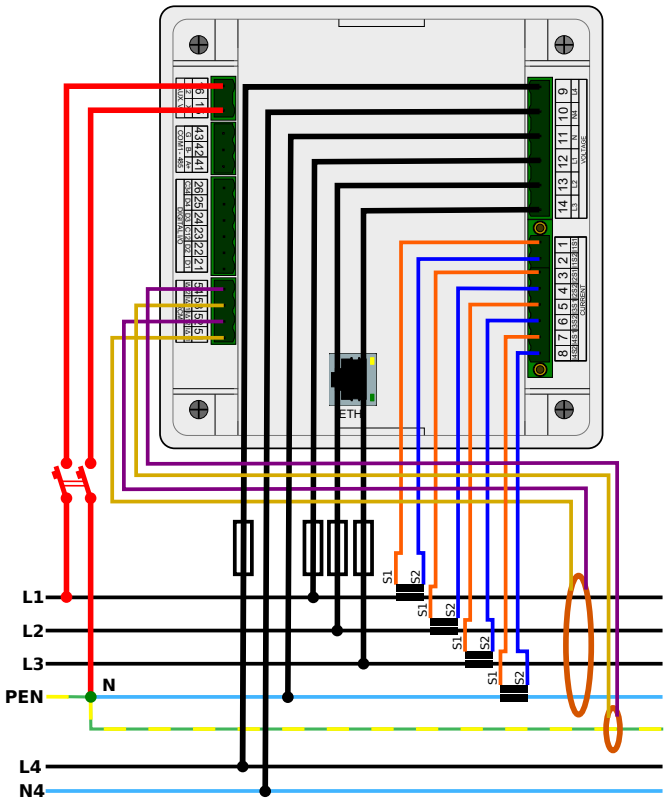
* preferred types (short delivery times)
** Relay input

Technical specifications - UMD 913

		UMD 913	UMD 913G
Inputs and outputs	Digital inputs/outputs	4 inputs/outputs	4 inputs/outputs
	Relay inputs/outputs	None	1 input / 4 outputs
	Analogue inputs/outputs	2 analogue inputs (for RCM or 0/4 - 20 mA)	4 analogue inputs (2 of which for RCM or 0/4 - 20 mA) and 2 analogue outputs
	Differential current inputs		
	Temperature inputs	None	1 Pt100 input -50 - 150 °C
Communication	Interfaces	RS485, Ethernet, Front-USB	RS485, Ethernet, Front-USB
	Communication protocols	Modbus RTU, Modbus TCP/IP, SMTP, SNMP, DHCP, JSON	
Further functions	Alarms	integrated logic: Limit values for exceeding/falling below freely defined values	
	Internal temperature measurement	-40 - 85 °C	
Data logger	Storage capacity and allocation	512 MB flash freely partitionable into several archives	
	Measured value storage	Freely configurable measured values with different averaging intervals	
Electrical connection	Supply voltage	230 V variant: 75 - 500 V AC / 90 - 600 V DCc	
	Power input	30 VA / 12 W	
	Overvoltage category	CAT III / 300 V	
Accuracy classes		Voltage: Cl. 0.1 / Current: Cl. 0.1 / Frequency: Cl. 0.02	
		Active power: Cl. 0.2 / Reactive power: Cl. 1 / Apparent power: Cl. 0.2	
		Harmonic oscillations: Cl. 1 / Power factor: Cl. 0.5 / cos phi: Cl. 0.5	
		Real energy: Cl. 0.2 / Reactive energy: Cl. 2 / Apparent energy Cl. 0.5	
Measuring inputs	Voltage	U L-N: 3 - 880 V AC	
		U L-L: 5 - 1530 V AC	
	Overload voltage	Permanent U L-N: 1300 V AC / peak overload for max. 1 sec. U L-N: 2210 V AC	
	Input impedance voltage	2.7 MOhm	
	Input load voltage	< 0.1 VA	
	Frequency	40 ... 70 Hz (DC-500 mode: 0 ... 500 Hz)	
	Transformers	4x 1 / 5 A	
	Overload current	Permanent: 7.5 A AC / peak overload for max. 1 sec: 70 A AC	
	Input impedance current	< 10 mOhm	
	Input load current	< 0.5 VA	
	Sampling rate	28.8 kHz	
	Harmonics per order	1st ... 128. for current and voltage; Optional: Supraharmonics from 2 kHz ... 9 kHz	
	Measurement procedure	IEC 61000-4-30 Cl. A	
Mechanical attributes	Operating temperature range	-20 - 60 °C at < 95 % relative humidity	
	Bearing temperature range	-40 - 80 °C at < 95 % relative humidity	
	Protection class front / rear	IP 40; Optional IP 54 / IP 20	
	Dimensions WxHxD	144 x 144 x 70 mm	
	Weight	0.9 kg	
Internal real-time clock	Accuracy	+/- 0.2 s per day at 0 - 40 °C	
	Possible synchronisation	NTP/SNTP; External GPS receiver; External pulses; System frequency; PC time	
FW Module		PQ A: included / GO: included / RCS: optional	
		MM: optional / UDP: optional / IEC104: optional	
		SH: optional	

* depending on the variant

Typical connection variant – UMD 913



Dimensional drawings – UMD 913