UMD 97 – Measuring equipment for installation in a control board

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UMD 97

The UMD 97 is a powerful measurement device for installation on the front board* and replaces all analogue measurement devices. It measures 3-phase current and voltage in 4-quadrant mode in class 0.2 and therefore the energy in class 0.5s, as well as all common network sizes such as harmonics up to the 50th harmonic. It can be connected via transformers with N/5 A or N/1 A. It maps the network quality according to EN 50160, EN 61000-2-2, EN 61000-2-4, EN 61000-2-12. It has a brilliant, large colour graphical display. The UMD 97 is easy to operate via 5 function keys. A PT100 is integrated internally. It can be used in both 400 V and 690 V networks, as well as in IT networks. It has a large 512 MB memory. The device can be accessed via the Ethernet interface and the mini USB connection on the front. This enables internet protocols to also be read in and PLC systems and building management systems to be connected easily. Digital inputs/outputs and a serial RS485 interface are also integrated. The PQ S and GO firmware modules can be added to extend the measurement device for network analysis. The ENVIS software is used to set parameters for the device and to visualise it.

* also suitable for DIN top hat rail installation with adapter.

Application

The device is used to measure network quality and consumption in low-voltage main distribution and sub-distribution systems.

Standard

INPUTS 3U, 3I	MEASUREMENT U,I,P,Q	PF,cos,THD	+/- Wh,varh	HARMONICS 50	SUPPLY 230V
SAMPLING 25,6 kHz	FLASH 512MB	USB	STANDARDS IEC 61557-12	STANDARDS class 0.5S IEC 62053-22	INPUTS 1xDIGI
CURRENT INPUT X/5A	MODBUS Modbus	OUTPUTS 2xPULSE			

Optional

WEBSERVER	INPUTS/OUTPUTS 4xDIGI	FIRMWARE GO	ETH	RS485
STANDARDS EN 50160	STANDARDS class S IEC 61000-4-30	SUPPLY 12V/24V/230V		OUTPUTS 2xRELAY
NTP	FIRMWARE RCS			

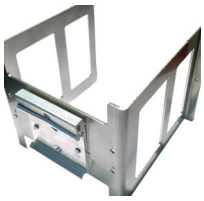
Technical specifications - UMD 97

		UMD 97CBM	UMD 97EL	UMD 97E
Inputs and outputs	Digital inputs/outputs	1 input and 2 outputs	1 input and 2 outputs	4 digital inputs/outputs
	Relay inputs/outputs	None	None	None
	Analogue inputs/outputs	None	None	None
	Differential current inputs	None	None	None
	Temperature inputs	None	None	None
Communication	Interfaces	RS485, Front-USB	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 - 80 °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: 100 - 275 V AC / 90 - 350 V DCc		
		24 V variant: 20 - 50 V AC / 20 - 75 V DCc		
	Power input	8 VA / 4 W		
	Overvoltage category	CAT III / 300 V		
Accuracy classes		Voltage: Cl. 0.5	Current: Cl. 0.5	Frequency: Cl. 0.05
		Active power: Cl. 0.5	Reactive power: Cl. 1	Apparent power: Cl. 0.5
		Harmonic oscillations: Cl. 2	Power factor: Cl. 0.5	cos phi: Cl. 0.5
		Real energy: Cl. 0.5	Reactive energy: Cl. 2	Apparent energy Cl. 0.5
Measuring inputs	Voltage*	U L-N: 6 - 375 V AC; Optional: 10 - 625 V AC		
		U L-L: 8 - 660 V AC; Optional: 20 -1090 V AC		
	Overload voltage*	Permanent U L-N: 600 V AC / peak overload for max. 1 sec. U L-N: 1200 V AC		
	Input impedance voltage*	3.6 MOhm		
	Input load voltage*	< 0.025 VA		
	Frequency	40 ... 70 Hz (DC-500 mode: 0 ... 500 Hz)		
	Transformers*	3x 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*	25.6 kHz		
	Harmonics per order	1st ... 50. for current and voltage		
	Measurement procedure	IEC 61000-4-30 Cl. S		
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	96 x 96 x 80 mm		
	Weight	0.3 kg		
Internal real-time clock	Accuracy	+/- 2 s per day at 0 - 40 °C		
	Possible synchronisation*	NTP/SNTP; External GPS receiver; External pulses; System frequency; PC time		
FW Module		PQ S: optional	GO: optional	RCS: optional
		MM: optional*	UDP: optional*	

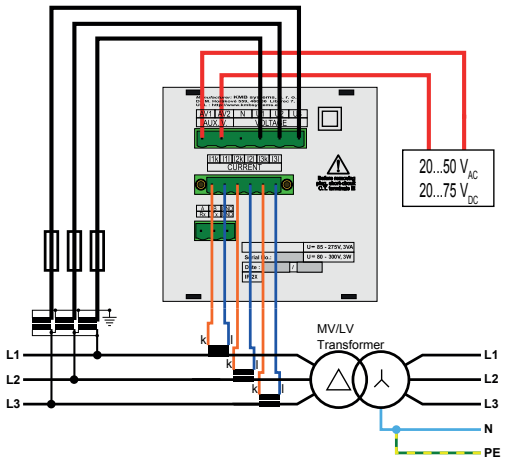
* depending on the variant

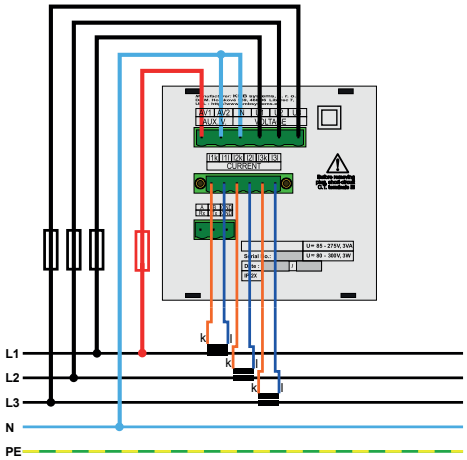
Supply voltage		Measurement voltage		Functions				Communication					Type	Item number
100 - 275 V AC 80 - 350 V DC	20 - 50 V AC 20 - 75 V DC	8 - 660 V LL	20 - 1090 V LL	Digital inputs	Digital outputs	Memory size in MB	Clock	RS485	Ethernet	Gateway Modbus master	M bus	USB		
●	-	●	-	1	2	512	●	●	-	-	-	●	UMD 97CBM*	11.06.1105
●	-	-	●	1	2	512	●	●	-	-	-	●	UMD 97CBM	11.06.2105
-	●	●	-	1	2	512	●	●	-	-	-	●	UMD 97CBM	11.06.3105
-	●	-	●	1	2	512	●	●	-	-	-	●	UMD 97CBM	11.06.4105
●	-	●	-	1	2	512	●	-	●	-	-	●	UMD 97EL*	11.06.1107
●	-	-	●	1	2	512	●	-	●	-	-	●	UMD 97EL	11.06.2107
-	●	●	-	1	2	512	●	-	●	-	-	●	UMD 97EL	11.06.3107
-	●	-	●	1	2	512	●	-	●	-	-	●	UMD 97EL	11.06.4107
●	-	●	-	4		512	●	●	●	●	-	●	UMD 97E*	11.06.1110
●	-	-	●	4		512	●	●	●	●	-	●	UMD 97E	11.06.2110
-	●	●	-	4		512	●	●	●	●	-	●	UMD 97E	11.06.3110
-	●	-	●	4		512	●	●	●	●	-	●	UMD 97E	11.06.4110

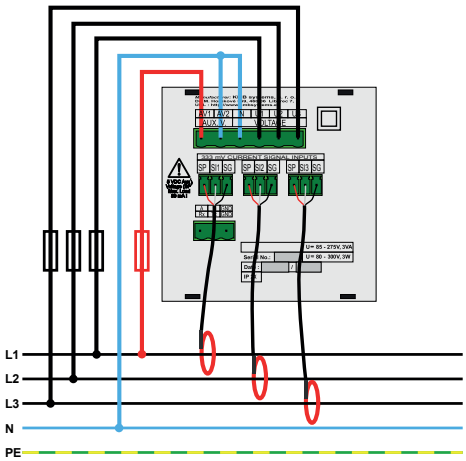
* preferred types (short delivery times)

Accessories		Item number
	AH9697 DIN top hat rail adapter (Depth incl. UMD: 110 mm)	81.00.9697
	USB 2.0 connection cable, Type A - mini B; 3.0m	18.21.2020
	IP65 protective hood	37.00.9600

Typical connection variant - UMD 97







Dimensional drawings - UMD 97