

MMD 98RCM – Mobile PQ measuring device

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data sheet

MMD 98RCM

The mobile measuring case MMD 98RCM records all voltage quality parameters and logs this data as single-, three- or four-phase measurement in the low-voltage network (230/400 VAC) in distribution networks in transformer stations, switchgears and as direct consumption measurement on machines and in buildings.

The heart of the system is a built-in UMD 98RCM in an IP65 plastic housing.

The device used the PQ S and GO firmware modules to map all voltage quality functions according to EN 50160.

Application

The case is used for mobile network quality and residual current measurement or for comparison measurements of existing measuring equipment.

Standard

INPUTS 3U, 4I	MEASUREMENT U, I, P, Q	PF, cos, THD	+/- Wh, varh	HARMONICS 50	WEBSERVER 	CURRENT INPUT 333mV	STANDARDS class S IEC 61000-4-30
SAMPLING 25,6 kHz	FLASH 512MB	USB 	STANDARDS IEC 61557-12	NTP 	ETH 	IP 65	STANDARDS EN 50160

Optional

FIRMWARE
RCS

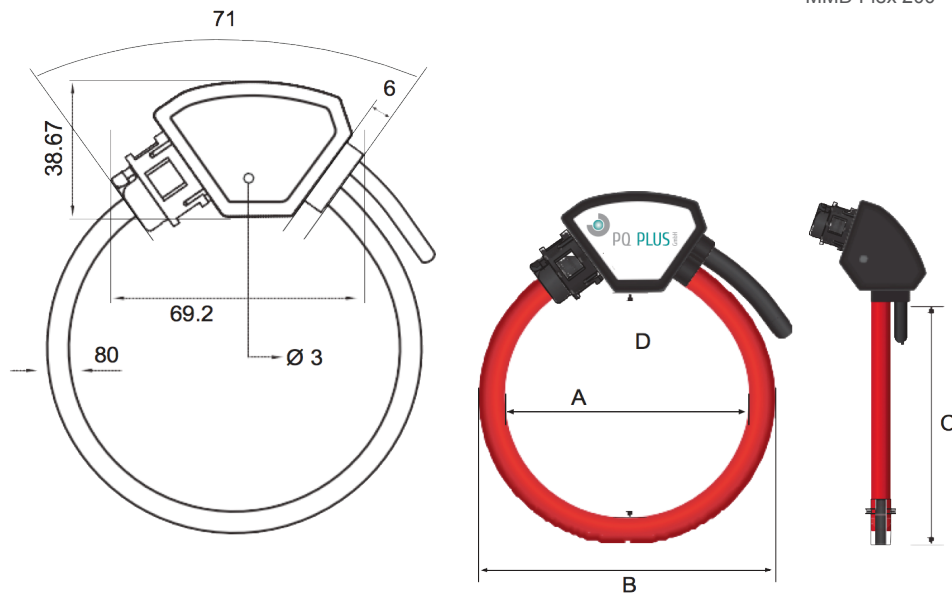
Designation	Functions	Communication	Item number
MMD 98RCM	Network analysis up to the 50th harmonic order	Ethernet, USB	72.56.9110



Transformers

The measuring case is equipped with 333 mV voltage inputs. This allows the direct connection of flexible Rogowski bobbins of the type MMD Flex Set.

Model	A	B	C	D	
MMD Flex 80	80	96	285	80	mm
MMD Flex 115	115	141	385	115	mm
MMD Flex 200	200	240	628	200	mm



[4 x KBU FLEX]	I rated [A]	d [mm]	Connection	Auxiliary voltage	Overvoltage category	Item number
MMD 98 FLEX SET 80	300	80	2 m cable	5 VDC 15 mA max	600 V CAT IV	03.39.3336
MMD 98 FLEX SET 115	1000	115	2 m cable	5 VDC 15 mA max	600 V CAT IV	03.39.3337
MMD 98 FLEX SET 115	2500	115	2 m cable	5 VDC 15 mA max	600 V CAT IV	03.39.3338
MMD 98 FLEX SET 200	3000	200	2 m cable	5 VDC 15 mA max	600 V CAT IV	03.39.3341

Other sizes upon request.

Accessories

Magnetic measuring adapter. 4-piece set for voltage tap. Consisting of 1x test probe, blue and 3x test probe, red.



Designation	Socket Ø	Length	Tip Ø	Overvoltage category	Item number
Magnet measuring adapter S	4 mm	53.6 mm	7 mm	CAT III 1000 V	03.38.4406
Magnet measuring adapter L	4 mm	75 mm	7 mm	CAT IV 1000 V	03.38.4407

Technical specifications - MMD 98RCM

MMD 98RCM							
Inputs and outputs	Digital inputs/outputs	None					
	Relay inputs/outputs	None					
	Analogue inputs/outputs	2 inputs (for RCM or as 0/4 - 20 mA)					
	Differential current inputs						
	Temperature inputs	None					
Communication	Interfaces	Ethernet, Front-USB, Local Bus					
	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	Over Measurement voltage (L1): 100 - 500 V AC					
		External: 10 - 36 V DC					
	Power input	8 VA / 4 W; External: 5 W					
	Overvoltage category	CAT III / 300 V					
Accuracy classes		Voltage:	Cl. 0.2	Current:	Cl. 0.2	Frequency:	Cl. 0.02
		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: 10 - 625 V AC (with external supply)					
		U L-L: 20 - 1090 V AC (with external supply)					
	Overload voltage	Permanent U L-N: 1000 V AC / peak overload for max. 1 sec. U L-N: 2000 V AC					
	Input impedance voltage	6 MOhm					
	Input load voltage	< 0.05 VA					
	Frequency	40 ... 70 Hz (DC-500 mode: 0 ... 500 Hz)					
	Transformers	4x 333 mV					
	Overload current	Permanent: 666 mV AC / peak overload for max. 1 sec: 3.33 V AC					
	Input impedance current	> 100 kOhm					
	Input load current	< 3 µVA					
	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	-25 - 60 °C at < 95 % relative humidity					
	Bearing temperature range	-40 - 80 °C at < 95 % relative humidity					
	Protection class open / closed	IP 40 / IP 65					
	Dimensions WxHxD	250 x 170 x 100 mm					
	Weight	Max. 2 kg					
Internal real-time clock	Accuracy	+/- 2 s per day at 0 - 40 °C					
	Possible synchronisation	NTP/SNTP; system frequency; PC time					
FW Module		PQ S: included		GO: included		RCS: optional	
		UDP: optional		IEC104: optional			

* depending on the variant

Typical connection variant – MMD 98RCM

