

MMD 98RCM – mobile PQ universal measurement device

Download data sheet



Measurement inputs:
3x voltage, 4x current,
2x RCM

Voltage measurement:
up to 1120 V

Current measurement: 333 mV
(Rogowski coils)



Measurement category:
CAT III / 300 V

Scanning: 57.6 kHz

Sampling rate of
measured values: up to 40 ms



Harmonics:
up to the 128th harmonic

Evaluation in accordance with
EN 50160:
Class S

Oscillogram recording:
Free parametrisation of triggers
and recording duration



Accuracy of current and voltage
measurement:
Class 0.1

Accuracy of active power / real
energy: Class 0.2 / 0.2S

Accuracy of reactive power / real
energy: Class 0.5 / 0.5S



Communication interfaces: Eth-
ernet, local bus, front USB

Communication protocols:
e.g., Modbus, MQTT,
IEC 60870-5-104

Connection of slave
devices: Storage, mapping, and
display of slave data

Areas of use

- Mobile measurement
- Comparative measurement
- Local network station
- Industry
- EEG plants

Standard

INPUTS 3U, 4I	MEASUREMENT U, I, P, Q	PF, cos, THD	Wh, varh	HARMONICS 128	WEBSERVER	CURRENT INPUT 333mV	STANDARDS class S IEC 61000-4-30
SAMPLING 57,6 kHz	FLASH 512MB	USB	STANDARDS IEC 61557-12	NTP	ETH	IP 65	STANDARDS EN 50160

Optional

FIRMWARE RCS	SUPRAHARMONICS 2 kHz...9 kHz
FIRMWARE IEC104	FIRMWARE MQTT

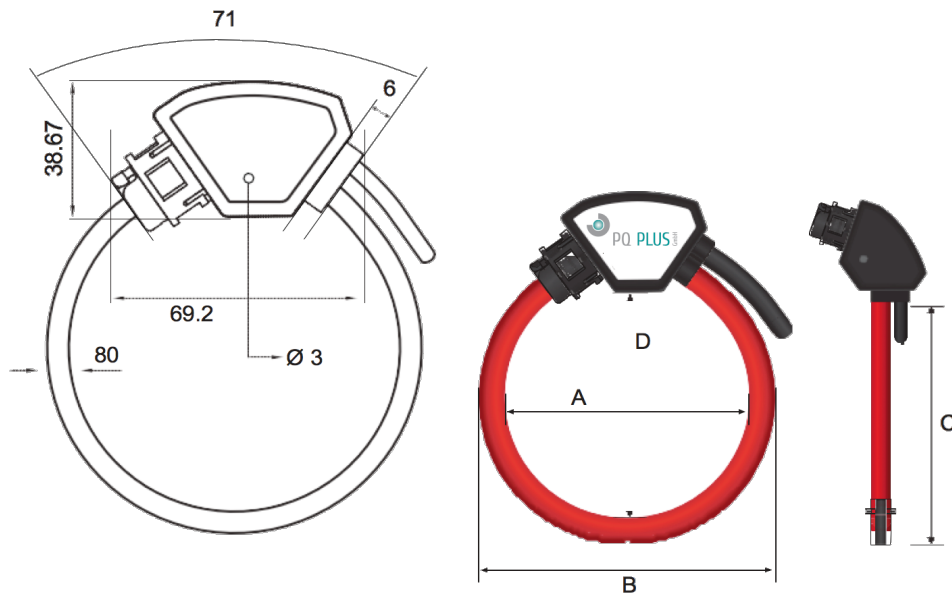
Designation	Functions	Communication	Item number
MMD 98RCM	Network analysis up to the 128 th harmonic	Ethernet, local bus, front USB	72.56.9110



Current transformers

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

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



[4 x KBU FLEX]	I nominal [A]	d [mm]	Connection	Auxiliary voltage	Measurement category	Item number
MMD 98 FLEX SET 115	1000	115	2 m cable	5 VDC 15 mA max	CAT IV / 600 V	03.39.3337
MMD 98 FLEX SET 200	3000	200	2 m cable	5 VDC 15 mA max	CAT IV / 600 V	03.39.3341

Other sizes on request.

Accessories

Magnetic measuring adapter. 4-piece set for voltage tap. Comprising 1x blue test probe and 3x red test probes.



Designation	Socket Ø	Length	Tip Ø	Measurement category	Item number
Magnetic measuring adapter S	4 mm	53.6 mm	7 mm	CAT IV / 600 V	03.38.4406
Magnetic measuring adapter L	4 mm	75 mm	7 mm	CAT IV / 1000 V	03.38.4407

Technical specification - MMD 98RCM

MMD 98RCM							
In- and outputs	Digital in-/outputs	none					
	Relay in-/outputs	none					
	Analogue in-/outputs	2 inputs (for RCM or as 0/4 ... 20 mA)					
	Residual 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 distribution	512 MB Flash free partitioning into several archives possible					
	Measured value storage	Freely configurable measured values with different averaging intervals					
Electrical connection	Supply voltage	Off measuring voltage (L1): 100 ... 500 V AC					
		External: 10 ... 36 V DC					
	Power consumption	8 VA / 4 W; external: 5 W					
	Overvoltage category	Category III					
Accuracy classes		Voltage:	Cl. 0.1	Current:	Cl. 0.5	Frequency:	Cl. 0.02
		Active power:	Cl. 0.2	Reactive power:	Cl. 0.5	Apparent power:	Cl. 0.2
		Harmonics:	Cl. 2	Power factor:	Cl. 0.5	cos phi:	Cl. 0.5
		Real energy:	Cl. 0.2S	Reactive energy:	Cl. 0.5S	Apparent energy:	Cl. 0.2
Measurement inputs	Voltage	U L-N: 2 ... 650 V AC (with external supply)					
		U L-L: 3.5 ... 1120 V AC (with external supply)					
	Overload voltage	Permanent U L-N: 1200 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)					
	Current transformers	4x 333 mV					
	Current overload	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	57.6 kHz					
	Harmonics per order	1. ... 128. for current and voltage; optional: Supraharmonics from 2 kHz ... 9 kHz					
Measuring method	IEC 61000-4-30 Cl. S						
Mechanical properties	Operating temperature range	-25 ... 60 °C at < 95 % relative humidity					
	Temperature range bearing	-40 ... 80 °C at < 95 % relative humidity					
	Protection type 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 modules		PQ S: included	GO: included	RCS: optional			
		UDP: optional	IEC104: optional	SH: optional			
		MQTT: optional					

Typical connection versions - MMD 98RCM

