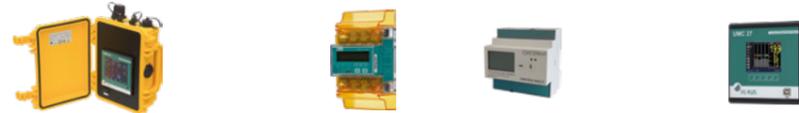● Standard ○ Optional
* available soon
** DC-500 mode (0 - 500 Hz)
*** Analogue input (RCM / 0 - 20 mA)

Type PQ PLUS	MMD		CMD 68	CMD EEG-CLP	UMC	
	98RCM	913	MID	MID / PTB-A 50.7	24	27
Supply voltage — 230 V variant	100 - 500 V $_{AC}$	75 - 500 V $_{AC}$	230 V / 400 V	230 V / 400 V	75 - 500 V $_{AC}$	75 - 500 V $_{AC}$
Supply voltage — 24 V variant	10 - 36 V $_{DC}$	-	-	-	-	-
Measurement category	CAT III	CAT III	CAT III	CAT III	CAT III	CAT III
Measuring range	3.5 - 1120 V $_{LL}$	5 - 1530 V $_{LL}$	230 V / 400 V	230 V / 400 V	20 - 1090 V $_{LL}$	3.5 - 1120 V $_{LL}$
Phase measurement	3U, 4I, 2Ircm	3U, 4I, 2Ircm	3U, 3I	3U, 3I	3U, 3I	3U, 4I
Current transformer input	333 mV (Rogowski)	1 A (Rogowski)	5 A; 1 A; 100 A	5 A; 1 A; 100 A	5 A; 1 A	5 A; 1 A
Frequency	40 - 70 Hz**	40 - 70 Hz**	50 Hz	50 Hz	40 - 70 Hz**	40 - 70 Hz**
Sampling rate	57.6 kHz	28.8 kHz	-	-	25.6 kHz	57.6 kHz
Averaging	40 ms; 200 ms	200 ms	-	-	200 ms	40 ms; 200 ms
Continuous measurement	●	●	●	●	●	●
Harmonic	1st - 128th	1st - 128th	-	-	1st - 50th	1st - 128th
Interharmonic	●	●	-	-	-	○ PQ S
THD-U %	●	●	-	-	●	●
THD-I %	●	●	-	-	●	●
Asymmetry	●	●	-	-	●	●
Flicker (Pst / Plt)	●	●	-	-	-	○ PQ S
Voltage events	●	●	-	-	-	○ PQ S
Oscilloscopes	●	●	-	-	-	○ GO
Class precision U/I	0.1	0.1	0.5	0.5	0.5	0.1
Active energy cl.	0.2S	0.2S	B	B	0.5S	0.2S
Digital inputs/outputs	-	-	- / 1 (2)	- / 1	-	-
Relay inputs/outputs	-	-	-	-	- / 9	1 / 18
Analogue inputs/outputs	-	-	-	-	-	-
Temperature input Pt100	-	-	-	-	-	-
Internal temperature measurement	●	●	-	-	●	●
Min/Max memory	●	●	○	●	●	●
Memory size	512 MB	512 MB	○	3 Jahre	-	512 MB
Clock	●	●	○	●	-	●
EN 50160	● PQ S	● PQ A	-	-	-	○ PQ S
Residual current	●	○	-	-	-	-
Communication						
RS485	-	-	○	○	-	●
Ethernet	●	●	○	○	-	●
USB	●	●	-	-	●	●
Local Bus	●	○	-	-	-	-
Web servers	●	●	○	○	-	●
M bus	-	-	○	○	-	●
Modbus RTU	-	-	○	○	-	●
Modbus TCP	-	-	○	○	-	●
MQTT	●	-	-	-	-	●

Weitere Informationen und den aktuellen Katalog finden Sie bei uns im Internet:
http://www.pq-plus.de

Date: 2023/12
Subject to technical changes.

Firmware modules

Function extensions for PQ Plus measuring devices. Firmware modules are device and serial number related and can be activated at any time.

PQ S / PQ A: Power Quality in Class A / Class S

PQ S: UMD 97 / UMD 98 / MMD 98 / UMD 911 / UMD 705 / UMD 707 / UMC 27
PQ A: UMD 913 / MMD 913 / MMB 700 / UMD 710

GO: High resolution oscillogram recording

UMD 97 / UMD 98 / MMD 98 / UMD 911 / UMD 913 / MMD 913 / UMD 705 / UMD 707 / UMD 710 / MMB 700 / UMC 27

RCS: Ripple Control Signals

UMD 97 / UMD 98 / MMD 98 / UMD 911 / UMD 913 / MMD 913 / UMD 705 / UMD 707 / UMD 710 / MMB 700 / UMC 27

MM: Modbus Master

UMD 97E / UMD 98 / MMD 98 / UMD 911 / UMD 913 / MMD 913 / UMD 705 / UMD 707 / UMD 710 / MMB 700 / UMC 27

UP: UDP Push

UMD 96EL / UMD 97EL / UMD 97E / UMD 98 / MMD 98 / UMD 911 / UMD 913 / MMD 913 / UMD 705 / UMD 707 / UMD 710 / MMB 700 / UMC 27

IEC104: telecontrol protocol

UMD 97 / UMD 98 / MMD 98 / UMD 911 / UMD 913 / MMD 913 / UMD 707 / UMD 710 / MMB 700 / UMC 27

SH: Supraharmonics

UMD 911 / UMD 913 / UMD 707 / UMD 710 / MMB 700 / UMC 27

ENVIS Software Suite

Energy management and PQ analysis tool

ENVIS

ENVIS is used for processing and analysing the archived measurement data. Whether simple consumption evaluations or the analysis of power quality according to standards. Data sets can be displayed in graphs and tables, or evaluated in the predefined and individually customisable reports. ENVIS is available in the Basic and Base versions.

ENVIS.Daq

ENVIS.Daq is used to configure and manage the universal measurement diveces. Live data can also be displayed and checked. The data from the memory can be downloaded to a binary file (export to .xml / .csv) or saved directly to an SQL database.

ENVIS.Online

ENVIS.Online is a system service that regularly reads out the memories of the connected universal measurement devices or retrieves live data and stores it in an SQL database. Reports can be created automatically and sent by e-mail or stored locally. Limit values can be monitored by means of an alarm management system.

PRODUCT PORTFOLIO

- Power Quality
- Energy management
- Residual current measurement
- MID-compliant measurement
- Power factor correction

Type PQ PLUS	UMD 96 M	UMD 96 S	UMD 96 EL	UMD 97 CBM	UMD 97 E	UMD 97 EL	UMD 98 RCM	UMD 98 RCM-T	UMD 98 LB	UMD 98 EVU	UMD 911 LB	UMD 913 G	MMB 700	MMU 3	MMI 12 FLEX	MMI 12 RCM	MMI 12 DC	UMD 703 S	UMD 705 E	UMD 707 RCM	UMD 707 DC	UMD 710 A	UMD 710 EVU	UMD 710 MVU
Supply voltage 230 V variant	$85 - 275\ V_{AC}$			$75 - 275\ V_{AC}$			$75 - 275\ V_{AC}$		-		$75 - 500\ V_{AC}$	$75 - 500\ V_{AC}$	-	-				$100 - 310\ V_{AC}$	$85 - 510\ V_{AC}$	$85 - 250\ V_{AC}$		$75 - 275\ V_{AC}$	-	
Supply voltage 24 V variant	$20 - 75\ V_{DC}$			$20 - 75\ V_{DC}$			$20 - 75\ V_{DC}$		$10 - 36\ V_{DC}$		$10 - 36\ V_{DC}$	-	Local Bus	$10 - 29\ V_{DC}$	Local Bus			-	$20 - 75\ V_{DC}$	-		$10 - 30\ V_{DC}$		
Measurement category	CAT III			CAT III			CAT III			CAT IV	CAT IV	CAT III	CAT IV	CAT III	CAT III			CAT III	CAT III	CAT III		CAT III		CAT IV
Measuring range	$8 - 1090\ V_{LL}$			$3.5 - 1120\ V_{LL}$			$3.5 - 1120\ V_{LL}$				$3.5 - 1120\ V_{LL}$	$5 - 1530\ V_{LL}$	$5 - 1470\ V_{LL}$	$14 - 610\ V_{LL}$	-			$14 - 615\ V_{LL}$	$7 - 720\ V_{LL}$	$5 - 1470\ V_{LL}$		$5 - 1470\ V_{LL}$		$0.04 - 20\ V$
Phase measurement	3U, 3I			3U, 3I			3U, 4I, 2Ircm	3U, 4I, 1Ircm	3U, 4I, 1Ircm	3U, 4I	3U, 4I, 2Ircm	4U, 4I, 2Ircm	3U, 3I / 12I	3U	12I			3U, 3I	3U, 3I	4U, 5I		3U, 4I, 1Ircm	3U, 3I	
Current transformer input	5 A; 1 A; 333 mV			5 A; 1 A			5 A; 1 A; 333 mV				5 A; 1 A	5 A; 1 A	5 A; 1 A / 333 mV	-	333 mV	Ircm	± 4 V	333 mV	5 A; 1 A	Ircm	± 4 V	5 A; 1 A		
Frequency	40 - 70 Hz**			40 - 70 Hz**			40 - 70 Hz**				40 - 70 Hz**	40 - 70 Hz**	40 - 70 Hz**	40 - 70 Hz**	-			40 - 70 Hz	40 - 70 Hz**	40 - 70 Hz**		40 - 70 Hz**		
Sampling rate	25.6 kHz			57.6 kHz			57.6 kHz				57.6 kHz	28.8 kHz	28.8 kHz	6.4 kHz	6.4 kHz			6.4 kHz	25.6 kHz	28.8 kHz		28.8 kHz		
Averaging	200 ms			40 ms; 200 ms			40 ms; 200 ms				40 ms; 200 ms	200 ms	200 ms	200 ms	200 ms			200 ms	40 ms; 80 ms; 200 ms	200 ms		200 ms		
Continuous measurement	●			●			●				●	●	●	●	●			●	●	●		●		
Harmonic	1st - 50th			1st - 128th			1st - 128th				1st - 128th	1st - 128th	1st - 128th	1st - 25th	-			1st - 50th	1st - 50th	1st - 128th		1st - 128th		
Interharmonic	-			○ PQ S			○ PQ S				○ PQ S	●	-	○ PQ A	-			-	○ PQ S	○ PQ S		●		
THD-U %	●			●			●				●	●	●	●	-			●	●	●		●		
THD-I %	●			●			●				●	●	●	-	-			●	●	-		●		
Asymmetry	●			●			●				●	●	●	●	-			-	●	●		●		
Flicker (Pst / Plt)	-			○ PQ S			○ PQ S				○ PQ S	●	-	-	-			-	○ PQ S	○ PQ S		●		
Voltage events	-			○ PQ S			○ PQ S				○ PQ S	●	-	○ PQ A	-			-	○ PQ S	○ PQ S		●		
Oscilloscopes	-			○ GO			○ GO				○ GO	●	-	○ GO	-			-	-	-		●		
Class precision U/I	0.5			0.1			0.1				0.1	0.1	0.1	0.05 / -	- / 0.5			1	0.2	0.1		0.1		
Active energy cl.	0.5S			0.2S			0.2S				0.2S	0.2S	0.2S	1	1			-	1	0.5S		0.2S		
Digital inputs/outputs	1 / 2			1 / 2	4	1 / 2	1		○	2	4	4	-.	-	-			-	2	4		4		
Relay inputs/outputs	○			○			-				-	1 / 4	-	-	-			-	-	-		○		
Analogue inputs/outputs	-			-			2*** / -	1*** / -	1*** / -	-	2*** / -	2*** + 2 / 2	-	-	-			-	-	-		-		
Temperature input Pt100	-			-			-	1	○	1	1	1	-	-	-			-	●	-		1		
Internal temperature measurement	●			●			●				●	●	●	-	-			-	●	-		●		
Min/Max memory	●			●			●				●	●	●	-	-			-	●	-		●		
Memory size	-			512 MB			512 MB				512 MB	512 MB	512 MB	-	-			-	512 MB	512 MB		512 MB		
Clock	-			-			-				-	-	-	-	-			-	-	-		-		
EN 50160	-			○ PQ S			○ PQ S				○ PQ S	● PQ A	-	○ PQ A	-			-	○ PQ S	○ PQ S		● PQ A		
Residual current	-			-			●		○	-	●	●	-	-	-			-	-	●	-	●	-	-
Communication																								
RS485	-	-	●	●	-	-	●	●	-	●	●	●	●	-	-	-	-	●	-	●	●	●	●	
Ethernet	-	●	-	-	●	-	-	-	●	-	●	●	●	-	-	-	-	-	-	-	●	●	●	
USB	-	-	-	-	●	-	-	●	-	●	●	●	●	-	-	-	-	-	●	-	-	●	-	
Local Bus	-	-	-	-	-	-	-	-	○	-	-	-	-	-	●	-	-	-	-	-	-	-	-	
Web servers	-	-	-	●	-	-	-	-	-	-	●	●	●	-	-	-	-	-	-	-	-	●	-	
M bus	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Modbus RTU	-	-	●	●	-	-	●	●	-	●	●	●	●	●	-	-	-	●	-	●	●	●	●	
Modbus TCP	-	-	-	-	●	-	-	-	●	-	●	●	●	-	-	-	-	-	-	-	●	●	●	
MQTT	-	-	-	-	-	-	-	-	-	-	●	●	●	-	-	-	-	-	-	-	-	●	-	