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Accessories for the mobile Power Quality Analyzers

PQ-Box 100 & 150 & 200 & 300

Jun-18

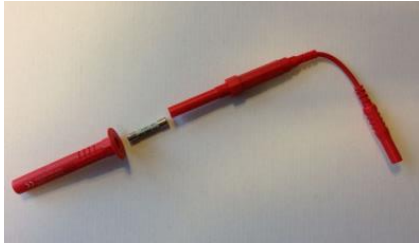| Accessoires	
Rogowski coil set CAT IV 600V Current range: 1A to 3000A RMS, Accuracy: 1% size: 61 cm (24"), <u>set of 4 pieces</u> Diameter = 194mm, Rogowski clamp head = 9,9mm Frequency range: 10Hz to 20kHz **Order code: 111.7001**	
Rogowski coil set CAT IV 600V Current range: 1A to 6000A RMS, Accuracy: 1% size: 91 cm (36"), set of 4 pieces Diameter = 290mm, Rogowski clamp head = 9,9mm Frequency range: 10Hz to 20kHz **Order code: 111.7006**	
Rogowski coil set CAT IV 600V Current range: 1A to 1500A RMS, Accuracy: 1% size: 40 cm (16"), <u>set of 4 pieces</u> Diameter = 127 mm, Rogowski clamp head = 9 mm Frequency range: 40Hz to 20kHz **Order code: 111.7030**	
Rogowski coil set CAT IV 600V Current range: 1A to 3000A RMS, Accuracy: 1% size: 60cm (24"), <u>set of 4 pieces</u> Diameter = 190mm, Rogowski clamp head = 9mm Frequency range: 40Hz to 20kHz **Order code: 111.7036**	
Rogowski coil set CAT IV 600V Current range: 1A to 500A RMS; Accuracy: 1% size: 22 cm (9"), <u>set of 4 pieces</u> Diameter = 70mm, Rogowski clamp head = 6,1mm Frequency range: 10Hz to 50kHz **Order code: 111.7085**	

Accessoires	
Current clamp 4 probes CAT III 600V MU-Metal clamp with two switchable measurement ranges, 15 mm inner diameter, <u>set of 4 pieces</u> (high precision – low angle error) Switchable measurement range 0…20A…200A **Order code: 111.7015**	
Current clamp 4 probes CAT III 600V Current clamp, 15 mm inner diameter, <u>set of 4 pieces</u> Measurement range 0…50A **Order code: 111.7035**	
Current clamp 3 probes CAT III 600V MU-Metal Current clamp, 15 mm inner diameter <u>set of 3 pieces</u> , (special export edition) Measurement range 0…20A **Order code: 111.7003**	

Accessoires	
Extension cable for current clamps & Rogowski Coils 5m length, for 7-pole Amphenol plug, IP65 **Order code: 111.7025**	
Adapter cable set with 4 mm banana plugs for connection of AC / DC clamp (111.7020) and other manufacturer **Order code: 111.7004**	
Current clamp one probe: 10mA…5A (100mV/A) AC, 4 mm banana plugs *Note: Adapter cable, order code 111.7004 is necessary* **Order code: 111.7043**	

Accessoires	
AC / DC Current clamp (set) One Current clamp with switchable measurement ranges 60A / 600 A (600mV output), power supply for permanent supply and two 4mm adapter sockets for adapter cable set. The adapter cable set 111.7004 is required additionally and has to be ordered separately. **Order code: 111.7020**	
Magnetic voltage probe, 7mm with 4 mm safety plug (3 x red,1 x blue) 7mm **Order code: 111.7008**	
Magnetic voltage probe, 6mm with 4 mm safety plug (3 x black, 1 x blue) 6mm **Order code: 111.7045**	
Test plug with 4 mm safety banana sockets for voltage Measurement at grounding receptacle European socket **Order code: 582.0511**	
Test plug with 4 mm safety banana sockets for voltage Measurement at grounding receptacle universal socket **Order code: 582.0509**	

Accessoires	
Variogrip – voltage tap Adjustable voltage tap for hexagon socket screws, 5mm. **Order code: 111.7051**	
Variogrip – voltage tap Adjustable voltage tap for hexagon socket screws, 6mm. **Order code: 111.7052**	
Grip F – voltage tap Adjustable voltage tap for power bars, 0..30mm **Order code: 111.7053**	
Clutch – voltage tap Voltage tap for fast and reliable contact of pins / bolts **Order code: 111.7065**	
Spring Grabber– voltage tap Voltage tap for fast and reliable contact of pins / bolts **Order code: 111.7066**	
Test Tap – voltage tap Voltage tap for fast and reliable contact of sockets **Order code: 111.7067**	
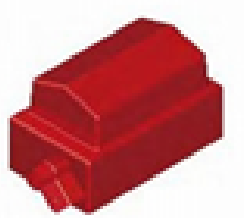
Accessoires	
Fuse voltage probe High performance fuse (1A) with both sides 4mm banana plugs usage with voltage measurement cables of PQ-Box 100. **Order code: 111.7014 .02**	
Dolphin clamps For tapping the measuring voltage for the PQ-Box. The set contains: 3x red, 1x blue, 1x green clamps 1000 V, CAT III / 32 A **Order code: 111.7024**	
Extension of measuring lead To extant the measuring lead of the PQ-Box. Length: 2m **Order code: 111.7054.00, black** ** 111.7054.01, red** ** 111.7054.02, blue**	
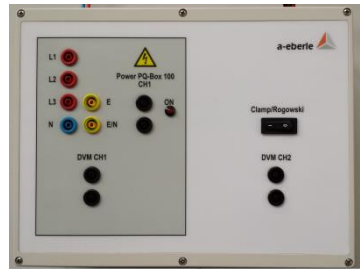
Accessoires	
Label set for measurement stripes Label set, different colored, to tag measurement stripes for international use. **Order code: 111.7044**	
Cable set with banana plugs Cable set, 4- phases , 1,5mm², 2m length, 4x Fuses 16A, 4x 4mm safety plug **Order code: 111.7038**	
Contact holder with fuse contact holder , 1 - phase, 35-240mm², 1 x Fuse 16 A **Order code: 111.7037**	
Measuring adapter 400V, CAT III Adapter 5-phases including plug (**32 A**) and conductor to measure the voltage and current values. 4 mm banana plugs to connect measurement stripes **Order code: 111.7042**	
Measuring adapter 400V, CAT III Adapter 5-phases including plug (**16 A**) and conductor to measure the voltage and current values. 4 mm banana plugs to connect measurement stripes **Order code: 111.7068**	

Accessoires	
Measuring adapter, 3-phase, 230V, CAT II Adapter 3-phases including plug and conductor to measure the voltage and current values. 4 mm banana plugs to connect measurement stripes **Order code: 111.7056**	
Test plug with 4 mm safety banana sockets for voltage Measurement at 16A CEE socket **Order code: 111.7072**	
Test plug with 4 mm safety banana sockets for voltage Measurement at 32A CEE socket **Order code: 111.7073**	
GPS Clock for PQ-Box radio controlled GPS-clock, RS232 for PQ-Box U_h: H1 or H2, with accessory **Order code: 111.9024.47 (H1)** H1: external AC 85V…110V…264V/DC88V…220V…280V **Order code: 111.9024.48 (H2)** H2: external DC 18V … 60V … 72V	

Accessoires	
USB – RJ45 extension cable Extension of USB cable via RJ 45, max 45m **Order code: 111.9030.51**	
USB - Ethernet Adapter for remote readout (only PQ-Box 100) **Order code: 111.9030.43**	
UMTS connection for TCP interface To connect the PQ-Box 150/200/300 via UMTS **Order code:** **Basic Unit: Tosibox Lock, 111.9030.55** **Stick: Tosibox Key, 111.9030.56** **Modem: USB-UMTS(3G) Modem, 111.9030.54** ** Antenna adapter (3G), 111.9030.58** ** USB-LTE (4G) Modem, 111.9030.63** ** Antenna adapter (4G), 111.9030.64** **Antenna: Antenna, 8m cable, 111.9030.59** ** Extension, 10m, 111.9030.60**	

Accessoires	
LEMP Isolation cover Small LEMP Isolation cover for PQ-Box 100 (only!) to cover measurement equipment during recording at the house connection box. A simple and really rough case of a weak and steady isolation material allows a maximum way of safety. The cover could be locked by a locker, cable connector or seal at the cable sleeves. **Dimensions: 450x 250x250 mm** **Order code: 111.7012**	
LEMP Isolation cover for PQ-Box, small LEMP Isolation cover for PQ-Box to cover measurement equipment during recording at house connection-box. A simple and really rough case of a weak and steady isolation material allows a maximum way of safety. The cover could be locked by a locker, cable connector or seal at the cable sleeves. **Dimensions: 470x300x240 mm** **Order code: 111.7071**	
LEMP Isolation cover for PQ-Box, large LEMP Isolation cover for PQ-Box to cover measurement equipment during recording at house connection-box. A simple and really rough case of a weak and steady isolation material allows a maximum way of safety. The cover could be locked by a locker, cable connector or seal at the cable sleeves. **Dimensions: 735x435x240 mm** **Order code: 111.7086**	

Accessoires	
Calib Box Calibration set for PQ-Box 100/150/200/300 for connecting a calibrator, (default 230V). Adjustment of all U / I inputs via software with report **Order code: 111.7039**	
DKD calibration of PQ-Box and accessories Depending on the complexity of the desired measurement points and test accessories. The PQ-Box, current clamp and / or rogowski coil is checked by an external calibration laboratory and returned with report document. **Order code: 200.0010**	**esz** esz AG calibration & metrology akkreditiert durch die / accredited by the **Deutsche Akkreditierungsstelle GmbH** als Kalibrierlaboratorium im / as calibration laboratory in the **Deutschen Kalibrierdienst** **DKD**
Calibration current clamp set Measurement points: 1A, 5A, 10A **Order code: 200.0101**	Prüfbescheinigung Test certificate
Calibration rogowski coil set Measurement points: 250A, 500A, 1000A **Order code: 200.0102**	Prüfbescheinigung Test certificate

Accessories	
Carrying box PQ-Box 100 Carrying box with forms for PQ-Box 100 and accessories. Case dimensions 534x 427x 157mm Plastic material, Weight 3.900 g **Order code: 582.0033**	
Carrying bag PQ-Box 100 Carrying bag, textile with forms for PQ-Box 100 and accessories Bag dimensions 420x 340x 85mm Weight 1.300 g **Order code: 582.0032.01**	
Protection cover Protection cover for PQ-Box 100 A simple and really rough case to protect your PQ-Box 100. Material color orange **Order code: 564.0500**	

Accessoires	
PQ-Box 100 Upgrade Basic (B0) to Light (B1) **Order code: 900.9090** Note: serial number required	PQ-Box 100 **PQ-Box 100** **Upgrade: Basic - Light** **Feature: B1**
PQ-Box 100 Upgrade Light (B1) to Expert (B2) **Order code: 900.9091** Note: serial number required	PQ-Box 100 **PQ-Box 100** **Upgrade: Light to Expert** **Feature: B2**
PQ-Box 100 Upgrade Basic (B0) to Expert (B2) **Order code: 900.9093** Note: serial number required	PQ-Box 100 **PQ-Box 100** **Upgrade: Basic to Expert** **Feature: B2**
PQ-Box 100 Upgrade Ripple control analysis (R0) to (R1) **Order code: 900.9092** Note: serial number required	PQ-Box 100 **PQ-Box 100** **Upgrade: RSA** **Feature: R1**
PQ-Box 100, Service package I Recalibration with certificate and inspection sticker **Order code: 200.0001**	Prüfbescheinigung Test certificate
PQ-Box 100, Service package II Recalibration with certificate and inspection sticker New Akku New SD-Karte, 2GByte **Order code: 200.0002**	Prüfbescheinigung Test certificate

Zubehör	
Carrying box PQ-Box 150 Carrying box with forms for PQ-Box 150 and accessories. Case dimensions 534x 427x 157mm Plastic material, Weight 3.900 g **Order code: 582.0038**	
PQ-Box 150 Upgrade Basic (B3) to Basic+(B2) **Order code: 900.9398** Note: serial number required	PQ-Box 150 **PQ-Box 150** **Upgrade: Basic – Basic+** **Feature: B2**
PQ-Box 150 Upgrade Basic+ (B2) to Light(B0) **Order code: 900.9390** Note: serial number required	PQ-Box 150 **PQ-Box 150** **Upgrade: Basic+ - Light** **Feature: B0**
PQ-Box 150 Upgrade Light (B0) to Expert(B1) **Order code: 900.9391** Note: serial number required	PQ-Box 150 **PQ-Box 150** **Upgrade: Light to Expert** **Feature: B1**
PQ-Box 150 Upgrade Basic+ (B2) auf Expert(B1) **Order code: 900.9393** Note: serial number required	PQ-Box 150 **PQ-Box 150** **Upgrade: Basic+ to Expert** **Feature: B1**

Zubehör	
PQ-Box 150 Upgrade Ripple control analyses (R0) to (R1) **Order code: 900.9392** Note: serial number required	PQ-Box 150 **PQ-Box 150 Upgrade: RSA Feature: R1**
PQ-Box 150 Upgrade Wifi (S0) to (S1) **Order code: 900.9397** Note: serial number required	PQ-Box 150 **PQ-Box 150 Upgrade: Wifi Feature: S1**
PQ-Box 150, Service package I Recalibration with certificate and inspection sticker **Order code: 200.0031**	Prüfbescheinigung Test certificate

Accessoires	
Carrying box PQ-Box 200 Carrying box with forms for PQ-Box 200 and accessories Case dimensions 534x 427x 157mm plastic material, weight 3.900 g **Order code: 582.0035**	
Protection braces for PQ-Box 200 Protection braces for PQ-Box 200 set of 2 pieces with strap, Material color orange **Order code: 564.0510**	
PQ-Box 200 Upgrade Ripple control analyses (R0) auf (R1) **Order code: 900.9094** Note: serial number required	PQ-Box 200 **PQ-Box 200 Upgrade: RSA Feature: R1**
PQ-Box 200 Upgrade Wifi (S0) to (S1) **Order code: 900.9396** Note: serial number required	PQ-Box 200 **PQ-Box 200 Upgrade: Wifi Feature: S1**
PQ-Box 200 Upgrade **Transient measuring board** (T0) auf (T1) **Order code: 200.0020** Note: device must be sent in for retrofitting	PQ-Box 200 **PQ-Box 200 Upgrade: Transientenkarte Feature: T1**
PQ-Box 200, Service package I Recalibration with certificate and inspection sticker **Order code: 200.0011**	**Prüfbescheinigung** **Test certificate**

Accessoires	
Carrying box PQ-Box 300 Carrying box with forms for PQ-Box 300 and accessories Case dimensions 534x 427x 157mm plastic material, Weight 3.900 g **Order code: 582.0039**	
Protection braces for PQ-Box 300 Protection braces for PQ-Box 300 set of 2 pieces with strap, Material color black **Order code: 564.0514**	
PQ-Box 300 Upgrade Ripple control analyses (R0) auf (R1) **Order code: 900.9394** Note: serial number required	PQ-Box 300 **PQ-Box 300** **Upgrade: RSA** **Feature: R1**
PQ-Box 200 Upgrade Wifi (S0) to (S1) **Order code: 900.9395** Note: serial number required	PQ-Box 300 **PQ-Box 300** **Upgrade: Wifi** **Feature: S1**
PQ-Box 300, Service package I Recalibration with certificate and inspection sticker **Order code: 200.0012**	Prüfbescheinigung Test certificate

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Accessoires	
Carrying bag PQ-Box 150/200/300 Carrying bag textile with forms for PQ-Box 150/200/300 and accessories. Case dimensions 475x 365x 65 mm, Weight 600 g **Order code: 582.0036**	
Power adapter for auxiliary voltage for PQ-Box 150/200/300 **Order code: 582.0513**	
Locker for PQ-Box 150/200/300 Locker with steel cable (length 1,8 m)to lash PQ-Box 150/200/300. **Order code: 111.7032**	

Accessoires	
Adapter cable set for PQ-Box 200/300 with 4 mm banana plugs for connection of AC / DC clamp (111.7020) and other manufacturer **Order code: 111.7028**	
Irradiance sensor and temperature probe Irradiance sensor and temperature probe for PQ-Box 200/300 Measurement range: 0..1000W/m², -30..70°C, 0..1V The power supply 111.7049 is required additionally and has to be ordered separately. **Order code: 111.7040**	
Temperature sensor probe Temperature sensor probe for PQ-Box 200/300 Measurement range: 20..80°C – 0..1V The power supply 111.7049 is required additionally and has to be ordered separately. **Order code: 111.7041**	
Power supply Power supply 230V AC, Output 15V DC, 400 mA **Order code: 111.7049**	

Accessoires	
DCF 77 Radio controlled clock for PQ-Box 150/200/300 DCF 77 Radio controlled clock for PQ-Box incl. rotating wall holder, connection cable and documentation, output: RS232 **Order code: 111.9024.01**	
Wide range power supply for PQ-Box 150/200/300 Range: 88V … 500V AC / 100V …300V DC 600V CAT IV, IP 65, Set with two adapter cables **Order code: 111.7069**	
Adapter cable As a junction at a measuring point **For use with power supply you need two pieces** **Order code: 582.2037**	

Wide range power supply Set
   1x Wide range power supply (111.7069)
   1x Test plug (582.0509)
   2x Adapter cable (582.2037)
 	
Order code: 111.7069.10	

Accessoires	
Battery- Pack for PQ-Box 150/200/300 For PQ-Box 150/200/300 **Order code: 570.0011**	
Micro-SD-Card 4GB for PQ-Box 150/200/300 For PQ-Box 150/200/300 **Order code: 900.9098.04**	
Micro-SD-Card 8GB for PQ-Box 150/200/300 For PQ-Box 150/200/300 **Order code: 900.9098.08**	

Type Network Analyzer	PQ-Box 100			PQ-Box 150				PQ-Box 200		PQ-Box 300
Option	Basic	Light	Expert	Basic	Basic+	Light	Expert	T0	T1	HF
Data memory in Gbyte (memory optional)	2			4 (32)				4 (32)		8 (32)
Sampling frequency voltage	10,24 kHz			20,48 kHz				40,96 kHz		409,6 kHz
Sampling frequency current	10,24 kHz			20,48 kHz				40,96 kHz		40,96 kHz
Sampling frequency transient measurement	–			–				–	4 MHz	409,6 kHz
Input voltage (resolution)	4 (24-bit)			4 (24-bit)				4 (24-bit)		4 (24-bit)
Input current (resolution)	4 (24-bit)			4 (24-bit)				5 (24-bit)		5 (24-bit)
Bridging energy failure	30 s			4 h				4 h	3,5 h	3,5 h
IP protection	IP65			IP65				IP65		IP65
Analog input (1000 mV)	–	–	–	–	–	–	–	×	×	×
Binary input (0 - 250 V AC/DC)	–	–	–	–	–	–	–	×	×	×
Evaluation according to: EN50160 (2015) / IEC61000-2-2 (2018) / IEC61000-2-12 /IEC61000-2-4 (Class 1; 2; 3)/NRS048 /IEEE 519	–	×	×	–	×	×	×	×	×	×
Recording free interval 1 sec to 30 min	×			×				×		×
Recording 200 ms interval & 3 sec interval parallel to free interval	–			–	–	×	×	×	×	×
Voltage & current: ½ periode min. max. average	×	×	×	×	×	×	×	×	×	×
Power: P, Q, S, PF, cos(φ), sin(φ), tan(φ)	×	×	×	×	×	×	×	×	×	×
Distortion-, fundamental reactive-, modulation- and unbalance power	×	×	×	×	×	×	×	×	×	×
Energy: P, Q, P+, P-, Q+, Q-	×	×	×	×	×	×	×	×	×	×
Flicker (Pst, Plt, Pinst)	–	×	×	–	×	×	×	×	×	×
Unbalanced voltage, current; positive sequence/ negative sequence	×	×	×	–	×	×	×	×	×	×
Voltage harmonics according IEC 61000-4-30 Ed. 3 Class A - to 50.	–	×	×	–	×	×	×	×	×	×
Voltage harmonics extreme values 2. to 50. (200 ms RMS)	–	–	–	–	–	×	×	×	×	×
Phase angle of voltage harmonics	–	–	–	–	–	×	×	×	×	×
Voltage harmonics 200 Hz frequency bands - 2 kHz to 9 kHz	–	–	–	–	–	–	×	×	×	×
Supraharmonics 2 kHz to 170 kHz (200 Hz / 2 kHz frequency bands)	–	–	–	–	–	–	–	–	–	×
Current harmonics 2. to 50.	–	×	×	–	×	×	×	×	×	×
Current harmonics extreme values 2. to 50. (200ms RMS)	–	–	–	–	–	×	×	×	×	×
Current harmonics 200 Hz Frequenzbänder 2 kHz bis 9 kHz	–	–	–	–	–	–	×	×	×	×
Phase angle of current harmonics according fundamental of voltage	–	–	–	–	–	×	×	×	×	×
P, Q, S, cos(φ) of harmonics	–	–	–	–	–	×	×	×	×	×
THD U and I ; PWHD U and I ; PHC	×	×	×	×	×	×	×	×	×	×
Frequency spectrum with 5 Hz resolution up to	–	5 kHz	5 kHz	–	–	10 kHz	10 kHz	20 kHz	20 kHz	170 kHz
Ripple control signal 100 Hz to 5 kHz (200 ms RMS max value)	–	–	×	–	–	×	×	×	×	×
Frequency, 10 sec, average-. min.- max-value	×	×	×	×	×	×	×	×	×	×
10/15/30 min interval P, Q, S, D, cos(φ), sin(φ), tan(φ) add. to other intv.	×	×	×	×	×	×	×	×	×	×
Online mode										
Oscilloscope recorder - sampling frequency	10,24 kHz			20,48 kHz				40,96 kHz		409,6 kHz
Power triangle 3D of active-, reactive, apparent power and distortion	×	×	×	×	×	×	×	×	×	×
Voltage harmonics and current harmonics	–	×	×	–	×	×	×	×		×
Interharmonic groups (U, I)	–	×	×	–	×	×	×	×		×
Voltage harmonics and current harmonics 200 Hz frequency band- 2 kHz to 9 kHz	–	–	–	–	–	–	×	–	×	×
Supraharmonics up to 170 kHz (200 Hz or 2 kHz frequency band)	–	–	–	–	–	–	–	–	–	×
Direction of harmonics and phase angle of current harmonics	–	×	×	–	–	×	×	×	×	×
Triggerfunctions (Oscilloscope & ½ Periode RMS recorder)										
Manual trigger via button	–	–	×	×	×	×	×	×	×	×
RMS level trigger (U, I)	–	–	×	–	×	×	×	×	×	×
RMS jump trigger (U, I)	–	–	×	–	×	×	×	×	×	×
½ periode frequency trigger (level; df/dt)	–	–	×	–	×	×	×	×	×	×
Phase shift trigger	–	–	×	–	×	×	×	×	×	×
Envelope trigger	–	–	×	–	×	×	×	×	×	×
Interval-trigger	–	–	×	–	–	×	×	×	×	×
Automatic-trigger	–	–	×	–	–	×	×	×	×	×
Trigger on binary input (0 - 250 V AC/DC signal; lower & upper threshold)	–	–	–	–	–	–	–	×	×	×
Option R1 Ripple signal voltage and current recorder 100 Hz to 3 kHz	R1	R1	R1	R1	R1	R1	R1	R1	R1	R1
Option S1 WLAN / Wifi interface	–			S1	S1	S1	S1	S1	S1	S1

Warranty Conditions:

Warranty: 1 year from date of delivery for accessories & 3 years for PQ-Boxes.

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