We take care of it.

40 Years of experience in measure and regulation technology

Founded in 1980
and located at „FrankenCampus" in Nuremberg

100 Employees
all dedicated to our corporate mission:
Clarity, Openness & Fairness

Active at all voltage levels
in production, transport and
distribution of electrical energy

Operating internationally
in approx. 65 countries

Measure. Regulate. Across all grids.

Shaping the grid infrastructure of tomorrow – this is our goal.

With our future-oriented solutions, we help our customers to face future challenges.

A. Eberle GmbH & Co. KG
Frankenstraße 160
90461 Nürnberg
Deutschland
+49(0)911 628108-0
info@a-eberle.de
www.a-eberle.de

Management System ISO 9001:2015 ISO/IEC 27001:2013
TÜVRheinland ZERTIFIZIERT
www.tuv.com ID 9000008637

Product overview

a-eberle

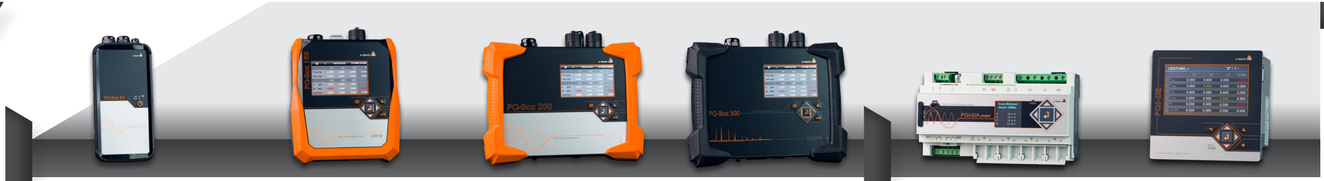
	Voltage Regulation		Earth Fault Compensation		Current Injection			Short-Circuit and Earth Fault Indicators		Low Voltage Regulation	
	REG-D	REG-DA	REG-DP	REG-DPA	MCI	CI	HPCI	EOR-3DS	EOR-1DS	LVRSys Outdoor	LVRSys Indoor
Design	Various Designs 19" plug-in module, surface-mounted and panel-mounted housing	Metal Housing for wall mounting housing, Panel mounting housing and din-rail mounting	Various Designs 19" plug-in module, surface-mounted and panel-mounted housing	Metal Housing for wall mounting housing, Panel mounting housing and din-rail mounting	Wall Mount Housing	Various Designs in outdoor or indoor control cabinet or on mounting plate	Various Designs in outdoor or indoor control cabinet or on mounting plate	Various Designs Panel mounting housing, or alternatively mountable on DIN rail mounting	Various Designs Panel mounting housing, or alternatively mountable on DIN rail mounting	Various depending on requirements	
Function 1	Regulation and control of transformers with on-load tap-changers		Reliable Earth Fault Compensation		8 Frequency multifrequency current injection (15 - 160 Hz)	2-Frequency current injection	2-Frequency current injection and pulse cabinet	Earth-Fault and Short-Circuit Indicator for intelligent sub-stations	Earth-Fault and Short-Circuit Indicator (directed/undirected)	High resistance to over voltages, direct and indirect lightning strikes	Voltage stabilization for longer lasting & more efficient machines
Function 2	Limit value monitoring, parallel operation with ParaGramer, current influence, detection of creeping network failures		Expandable with Current Injection for low or highly variable zero-sequence voltages		Calculation of detuning without coil procedure			Fault Recorder and Logbook for precise error analysis		Overload capable like NH fuse	
Function 3	Applications: Voltage Regulation, three winding transformer, transformer banks, phase shifting transformers, variable shunt reactor		Parallel control		Usable for networks up to 1300 A Ice (20 kV)	Usable for networks up to 1000 A Ice (20 kV)	Usable for networks up to 1000 A Ice (20 kV)	Compatible to many low power sensors	Incl. Rogowski Coil Sensors and low power Sensors	No grid interference causes no flicker or harmonics	Robust Tolerates harmonics and flicker
Function 4	Voltage control system can be created by adding further options or devices	Configurable hardware with various options	Resistance control		Inductance not necessary	16 A Inductance for Current Injection incl. automatic power adjustment and phase selection		Additional intelligent functions through free programmability	–	Highly efficient > 99,5 %	
Function 5	Expandable by customer specific programming		Expandable by customer specific programming		–	–	Pulse location with up to 140 A secondary pulse stroke in case of earth fault (up to 30 min)	2x Ethernet 100 mm mounting depth	Long-life Capacitor for >4h operation	Easy installation as a cable distribution cabinet	Intuitive operating concept Simplest parameterization via display
Function 6	SCADA Protocolls: IEC 61850 inkl. GOOSE and Sampled Values, IEC 60870-5-101/103/104, Modbus, DNP 3.0, Spabus, Profibus-DP		SCADA Protocolls: IEC 61850 incl. GOOSE andSampled Values, IEC 60870-5-101/103/104, Modbus, DNP 3.0, Spabus, Profibus-DP		SCADA via REG-DP(A)			SCADA Protocolls: IEC 61850 GOOSE, IEC 60870-5-101/103/104, Modbus, Modbus-Master, DNP 3.0, MQTT IoT, MQTT Management & Operations	Modbus RTU	Adjustable response time of the controller < 30 ms to 100 s	Immediate regulation < 30 ms response time
Software/ Function 7	AEToolbox		AEToolbox		AEToolbox via REG-DP(A)	AEToolbox via REG-DP(A)	AEToolbox via REG-DP(A)	AEToolbox (encrypted TCP/IP communication)	No Software save & load parameters via SD-Card	Operating Temperature -40°C up to +50°C ambient temperature	

We take care of it.

a-eberle

Comparison Power Quality Tools

Simply ingenious, ingeniously simple.

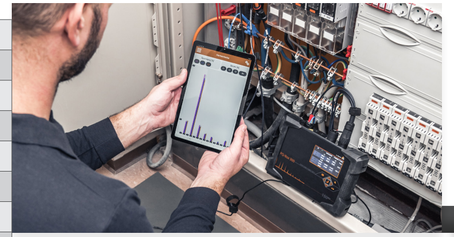


	Power Quality Mobile										Power Quality System	
	PQ-Box 50			PQ-Box 150				PQ-Box 200		PQ-Box 300	PQI-DA smart	PQI-DE
Option	Basic	Light	Expert	Basic	Basic+	Light	Expert	T0	T1			
Data memory (memory optional)	1 GB			4 (32) GB				4 (32) GB		8 (32) GB	1 (32) GB	1 (32) GB
Sampling frequency voltage / transient measurement	20,48 kHz / –			20,48 kHz / –				40,96 kHz / 4 MHz		409,60 kHz / 409,60 kHz	40,96 kHz / 40 kHz	40,96 kHz / 40 kHz
Sampling frequency current	20,48 kHz			20,48 kHz				40,96 kHz		40,96 kHz	40,96 kHz optional	up to 40,96 kHz
Input voltage (resolution)	4 (16-bit)			4 (24-bit)				4 (24-bit)		4 (24-bit)	4 (16-bit)	4 (16-bit)
Input current (resolution)	4 (16-bit)			4 (24-bit)				5 (24-bit)		5 (24-bit)	4 (16-bit)	5 (16-bit)
Bridging energy failure	1,5 h			4,0 h				4,0 h	3,5 h	3,5 h	Supercap	Supercap
IP protection	IP65			IP65				IP65		IP65	IP20	IP54
Voltage harmonics according to IEC 61000-4-30 Ed. 3 Kl. A	–	•	•	–	•	•	•	•		•	•	•
Voltage harmonics 200 Hz frequency bands - 2 kHz to 9 kHz (IEC 61000-4-7)	–			–	–	–	•	•		•	•	•
Display (Inch)	–			• (4,5)				• (4,5)		• (4,5)	• (1,7)	• (5,0)
Digital In- and Outputs (Trigger)	–			–				1/0		1/0	2/2	8/4
Residual Current Monitoring RCM & FCM	–			–				• (accessories)		• (accessories)	–	•
Temperature input for PT100 / PT1000 / KTY	–			–				• (accessories)		• (accessories)	–	•
Automatic evaluation according to norms	–	•	•	–	•	•	•	•		•	•	•
Magnitude V, A	< 0,1 %			< 0,05 %				< 0,05 %		< 0,05 %	< 0,05 %	< 0,05 %
Voltage and current harmonics up to	H50			9 kHz				9 kHz		170 kHz	9 kHz	9 kHz
Wifi	•			S1				S1		S1	–	–

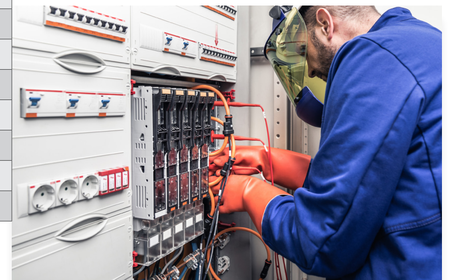
Power Quality Services

Expert knowledge, tailored to your requirements

- Network analysis according to EN 50160 and IEC 61000-2-2, -2-4, -2-12
- Discover the causes of grid problems quickly and in a targeted way
- Problem-focused assessment for every application
- Use of our high-grade Power Quality Analysers



We support you with our expertise and our well-equipped device lending pool including all necessary measurement accessories. After the network analysis, we will develop a solution with you based on the measurement data and evaluation.



WinPQ Software

Visualize your Power Quality data

- Plug&Play installation thanks to guided wizard
- Security by Design according to BDEW Whitepaper
- Separate flow chart for each measuring point
- TOP / DOWN analysis
- Autoreporting per measuring point

WinPQ system solution for all fix-installed and mobile power quality analyzers from A. Eberle. Monitor power quality permanentely - from high to low voltage in one system. Intuitive operation despite large data volumes.

WinPQ mobil & PQ-Box App

Features of the WinPQ mobil

- Extensive evaluation functions such as load analysis or the ability to determine the cause of network faults
- Automatic report creation to preset or freely adjustable standard settings
- Free software and free updates of the evaluation software and device firmware

PQ-Box App for Android and iOS

A free app for Android and iOS operating systems allows all PQ Boxes with integrated WLAN/Wi-Fi interfaces to be operated wirelessly. A wide range of online screens is available. It is also very easy to set device parameters for all measuring devices using a smartphone.