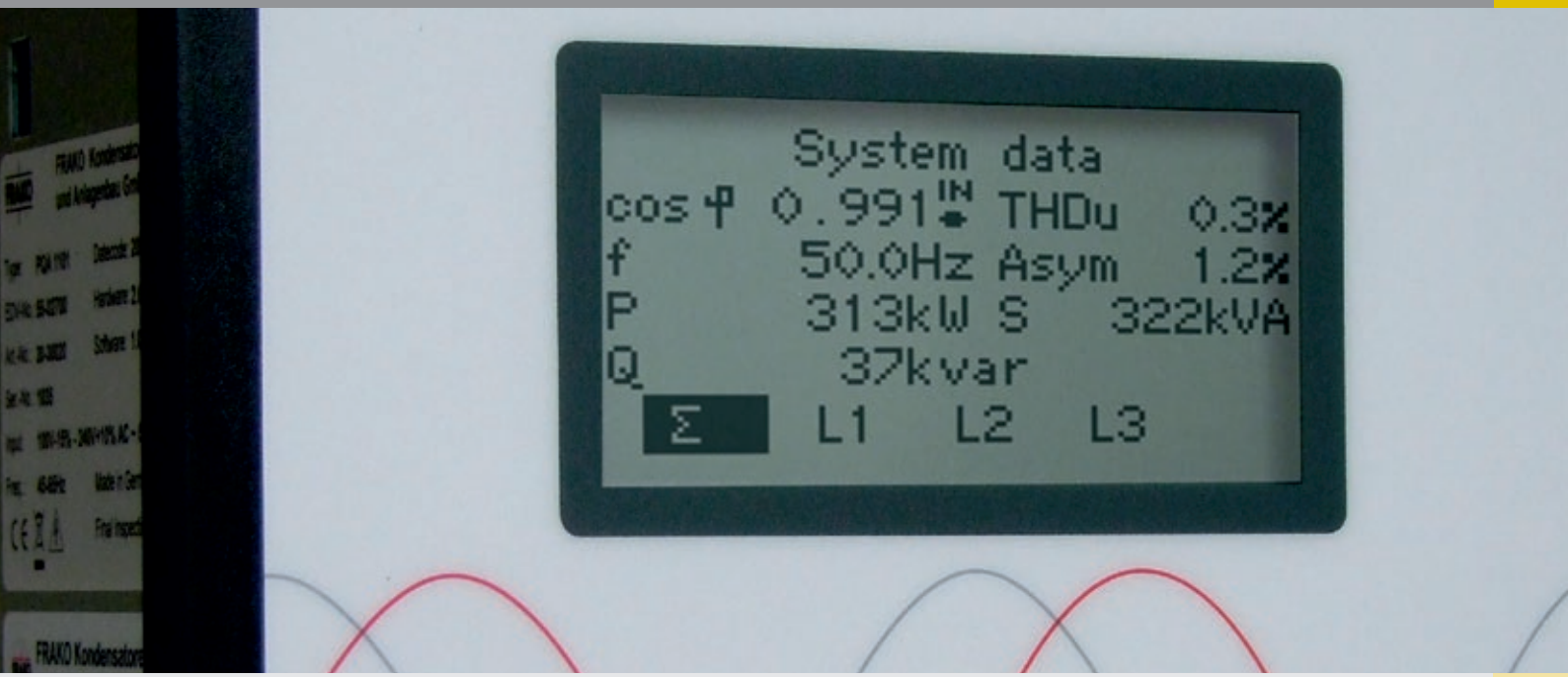


Mains Analysis Device

**The power quality of the electrical supply networks plays an increasingly important role for the operational safety of electrical installations and equipment.
Therefore it becomes more and more important to take appropriate measures to monitor the power quality. This thus provides a measurement of the residual current, i.e. the algebraic sum of the currents in L1, L2, L3 and N, as a key parameter in enabling an assessment of the condition of the electrical installation to be made.**

In contrast to the past it is obvious that it is not sufficient to do a single measurement and then disregard the mains quality if the measurement showed unproblematic values.

Due to complex production processes, changing load conditions and a steady progress in the degree of automation it became important to permanently monitor the quality of electrical power supply.

Thus one can acquire energy know-how and define critical values for measurement variables such as voltage, current and harmonics.

Automatic alarms via different information channels such as e-mail, SMS, warning lights, etc. allow the control of compliance with the now specified critical values.

Of course, critical values predefined by standards and regulations can also be signalled via these channels.

FRAKO Mains Monitoring devices can handle all these operations.

Depending on type and version this can be achieved already by a single device or – even better - in combination with the FRAKO Energy Management System.

Measurement of residual current, PE-monitoring, monitoring of transformers, measurements at low voltage distribution boards as well as monitoring of individual machines and consumers …. FRAKO has the solution for every application.

	PQA 1101
	
Voltage	85-267 V AC or 100-377 V DC
Frequency	45-65 Hz
Power consumption	Max. 7 VA
Contact temination 3/4/5-wire	• / • / -
Current measurements	3 x X/5A (Transformer current > 15 mA), electrically isolated
Voltage measurements	3 x 60-400 V AC (external/neutral conductor) 3 x 115-690 V AC (external/external conductor)
Harmonics V/A	1-19
Short term interruptions	•
Active energy class	1
Analogue In-/Outputs	2 temperature / -
Digital In-/Outputs	Tariff input for selection of 2 profiles / 1 alarm signalling contact 250 V AC, max. 3 A
Memory Min./Max. values	•
Memory size	-
Interfaces	
Ethernet	-
FRAKO Energy Management System	• via FRAKO Starkstrombus
RS-232 / RS-485	- / •
Profibus DP	-
Webserver / E-Mail / SNMP	- / -
Recommended applications	Transformer / NA
Catalogue Page	Page 197 ff.

PQA 1101
Power Quality Analyzer

A measuring and monitoring instrument for the acquisition, analysis and supervision of all key electrical data in low voltage 3-phase systems from 115 V to 690 V.

Description

Measurement functions:

- Phase-phase and phase-neutral voltages
- Currents in the 3 phases and N / PEN conductors
- cos φ, active and apparent power for each phase
- Frequency and asymmetry (load unbalance)
- THD of voltage and current for each phase
- Proportion of voltage/current harmonics V2 – V19 / I2 – I19
- Manual acquisition of voltage and current up to the 50th harmonic

Selectable options:

- 2x active and reactive energy via external tariff switching, or:
  - 1x active and reactive energy (imported)
  - 1x active energy (power feed-in / in-house generation)
  - 2x temperature via external PT100 RTD probes

Measurement data and Min/Max memory:

Measurement data per phase

- Voltage
- Storage
- Power (active, reactive and apparent power)
- Supply frequency
- Overcurrent
- Voltage harmonics
- Current harmonics
- Temperatures PT1 and PT2

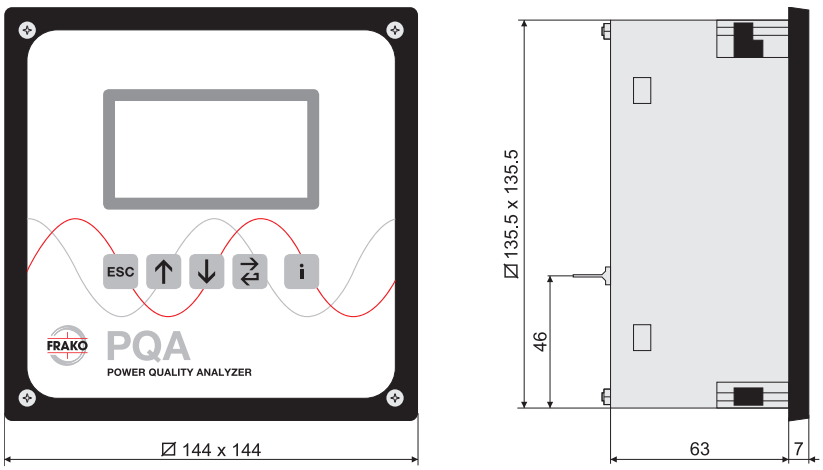
- Measurement via three external current transformers
- Menu-driven user interface in plain language with display of up to 8 measurement readings simultaneously
- Menu-driven configuration with user dialogue
- Backlit display
- Meter readings and alarm limits saved on power failure

Technical Data

Power supply	
Mains voltage	85 V AC – 267 V AC (absolute limits), Frequency 45 – 65 Hz or 100 V DC – 377 V DC (absolute limits)
Power consumption	Max. 5 VA
Fuse protection	2 A external protection required
Measurement input	
Voltage path	80 V AC – maximum 760 V AC (phase – phase, absolute limits), suitable for 115 – 690 V AC systems, electrically interconnected via high resistances, measurement of medium voltages possible using an x/100 V transformer; In areas where UL / CSA standards apply in systems with nominal voltages 115 – 600 V AC; power failure detection after duration of a half-wave
Current path	x/5 A AC or x/1 A AC (transformer secondary current > 15 mA), electrically isolated, power draw maximum 1 VA per transformer connection, continuous overload rating up to 6 A AC, transient overload maximum 10 A AC for 10 seconds
Outputs	
1 Alarm signalling contact	Volt-free NO contact, AC-14 250 V AC, maximum 3 A or DC-13 – 30 V DC, maximum 3 A, Note: utilization category AC-/DC- as per IEC 60947-5-1
Inputs	
Tariff inputs	2 profiles selectable (e.g. HT/NT) Control via open collector output. Voltage withstand rating required: 10 V.

Interfaces (mode can be selected)	
FRAKO Starkstrombus	For connection to the FRAKO Energy Management System, standardized fieldbus, RS 485, Protocol P-Net
Operating elements	Membrane keyboard with 5 keys
Display elements	Backlit LC Display with 128 x 64 pixel
Connections	Plug-in connecting strips (included with delivery)
Mechanical construction	
Dimensions	Dimensions of front panel: 144 x 144 mm (DIN 43700), panel cut-out: 138 x 138 mm (DIN 43700), installation depth: 75 mm
Ingress protection	Front of instrument IP40 (with seal set IP54), rear of instrument IP20 all as per 60529, contamination level 2 as per EN 61010-1:2011-07
Version	Housing protection class 1 according to DIN EN 61140
Installation	From front panel with screwdriver
Weight	Approx. 0.77 kg
Operating conditions	
Ambient temperature	0 °C up to +55 °C

Dimensions



Dimensional Drawing PQA 1101

all dimensions in mm