



IEC 61000-4-30 Class A / 0,2S Energy Control Meter

# METRUM® PQX3-PQR

19" (1/2 rack) control meter for energy and power quality



## PROACTIVE ANALYSIS FOR DIGITALIZED GRID

Metrum PQX3-PQR is a 19" (1/2 rack) class A control instrument for energy, power quality and disturbance analysis. The instrument's design makes it very easy to install directly into existing controller cabinets that support Essailec connectors.

The measuring instrument has maximum measurement performance. Due to the high accuracy together with the intelligent basic platform, the Metrum PQX3- PQR works excellently as both an energy control meter (0.2s) and a class A reference meter for power quality (IEC 61000-4-30).

## HIGH-QUALITY ANALYSIS

The PQX3 instrument series is developed to provide high-quality measurement data, with a focus on energy, power quality and disturbances. All data can be analyzed with the central Metrum PQ Controller system, which includes various analysis functions, e.g. a report generator according to current standards.



## THIRD-GENERATION MEASURING INSTRUMENT

The new PQX3-PQR was developed with the latest available technology and is part of Metrum's third-generation measuring instruments. The high-performance platform includes proactive and automatic analysis of data, which supports the user throughout the process. The measuring instruments support both multi-triggering and area triggering with several selectable configuration options. This expands the field of application and gives the possibility of dynamic control.

## DISTURBANCE RECORDER

Metrum PQX3-PQR is a full-scale disturbance recorder. The digital inputs can be used to trigger various events, such as breaker switches, and the instrument records waveforms and current status at high speed on all channels.

### Metrum IMU<sup>®</sup> concept



Built-in report analysis – Supports national voltage quality standards



Support for national voltage quality regulations (for example, Swedish EIFS 2013:1)



Clear feedback (red/green)



Proactive solution – early warning alarm, avoiding costly problems



Black box – documented information about disturbances and poor electricity quality



Statistics – indicates where to prioritize maintenance

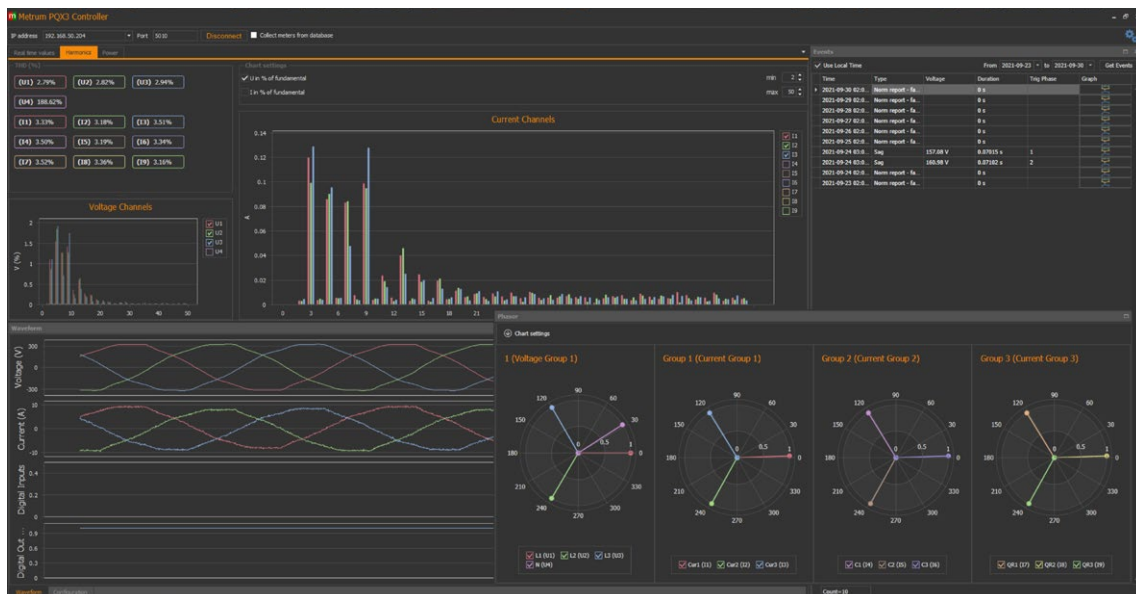
## HIGH-FREQUENCY MEASUREMENT

The new instrument has improved measurement performance and uses a high sampling rate and multiple measurement channels. This provides improved disturbance detection plus an extended measurement range including possible measurement of harmonics in higher frequency bands between 2–9 kHz.

## REAL-TIME ANALYTICS

Metrum PQX3-PQR has extended support for real-time analysis including streaming of measurement data for analysis and possible control. The measuring instruments have 2 Ethernet ports and handle parallel communication with multiple systems. Ex-amples of supported communication protocols:

- IEC 61 850
- IEC 62541, OPC-UA (IEC 61850 over OPC-UA)
- Modbus TCP
- DDS/RTPS



## METRUM® PQX3-PQR – physical data

Size (H x D x W)	129 x 257 x 203 (excluding handles)
Model	19" (1/2 rack)
Connection	Essailec connector
IP class	IP40 (front), IP20 (rear)
Weight	3.7 kg
Humidity	10–85% non-condensing
Temperature	-10°C to +55°C



# Technical specification

Parameters	Specification	Information	PQX3-PQR
<b>INPUTS/OUTPUTS</b>			
Voltage inputs	0–460 V RMS	Differential voltage inputs (+/-), 51.2 kHz/channel	4
HF voltage inputs	0–6 kV peak	Built-in high-frequency inputs (1 MHz)	4
Current inputs	0–10 A RMS	Differential current inputs (+/-), 51.2 kHz/channel	4
General inputs	-20 mA to +20 mA	51.2 KHz	2
Digital inputs	20–150 VDC	Digital inputs that support FR options	2
Digital outputs	120 VAC/150 VDC	For alarm and control	2
<b>POWER SUPPLY</b>			
Supply voltage	85–264 VAC/110–350 VDC	(47–63 Hz)	Yes
Built-in backup			Yes
<b>NORM COMPLIANCE</b>			
IEC 61000-4-30, class A	< 0.1%	Reference instrument	Yes
IEC 61000-4-7		Harmonic measurement	Yes
IEC 61000-4-15		Flicker measurements	Yes
EN 50 160		Calculated in the instrument	Yes
EIFS 2013:1		Calculated in the instrument	Yes
National standards (FoL, DEFU, NL, ZS387, etc.)		Large number of standards supported	Yes
Custom reports		Calculated in the instrument	Yes
Storage intervals		Selectable storage intervals	Yes
PQDIF format		Selectable export	Yes
<b>INSTRUMENT</b>			
Memory			32 GB
Sampling rate, U/I Standard inputs			51.2 kHz
Sampling rate, HF inputs			1 MHz
Accuracy		IEC 61000-4-30, class A	< 0.1%
Resolution (U/I)		Voltage/current inputs	16 bit
Resolution (GI)		General measurement inputs	16 bit
Input impedance – voltage inputs			10 MOhm
Input impedance – current inputs			10 mOhm
Anti-aliasing filter			Yes
PLL synchronization			Yes
<b>COMMUNICATION</b>			
USB		Computer port	Yes
Ethernet port 1 (RJ-45)		Ethernet port	Yes
Ethernet port 2 (RJ-45)		For redundancy	Yes
Time synchronization	For external time synchronization	(NTP/PTP/IRIG-B)	Yes

