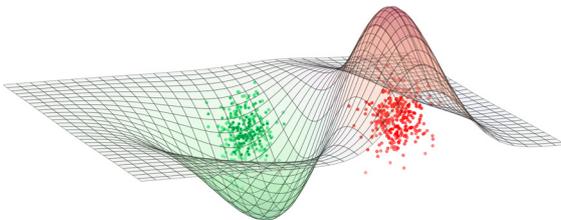




# METRUM<sup>®</sup> Pqx3-FR

POWER QUALITY FAULT RECORDER IEC 61000-4-30, Class A

Pro-active measurement solution for the electrical grid



**Pro-active:**

Identification and Alarm at early stage prevents severe and costly faults

**Black-box:**

Documented Faults and Power Quality deviations in the grid

## HIGH-QUALITY ANALYSIS

The PQX3-range of instrument is designed to deliver high-quality measurement data with focus on Power Quality and Electrical Faults. All data can be analyzed with the central Metrum PQ Controller System that contains different analysis functions such as report generators according to norm.



## 3RD GENERATION INSTRUMENT

The new PQX3-FR instrument is developed to use the latest technology available and is part of the new 3rd generation measurement instruments.

The high-performance platform includes Pattern Recognition Analysis used for Pro-active control and automatic data analysis - helping the user all the way.

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## The Metrum IMU®-concept



Built-in report analysis



Pro-active solution - Alarm at early stage avoids costly problems



Supports national voltage quality standards



Black-box, documented information about electrical faults and bad Power Quality

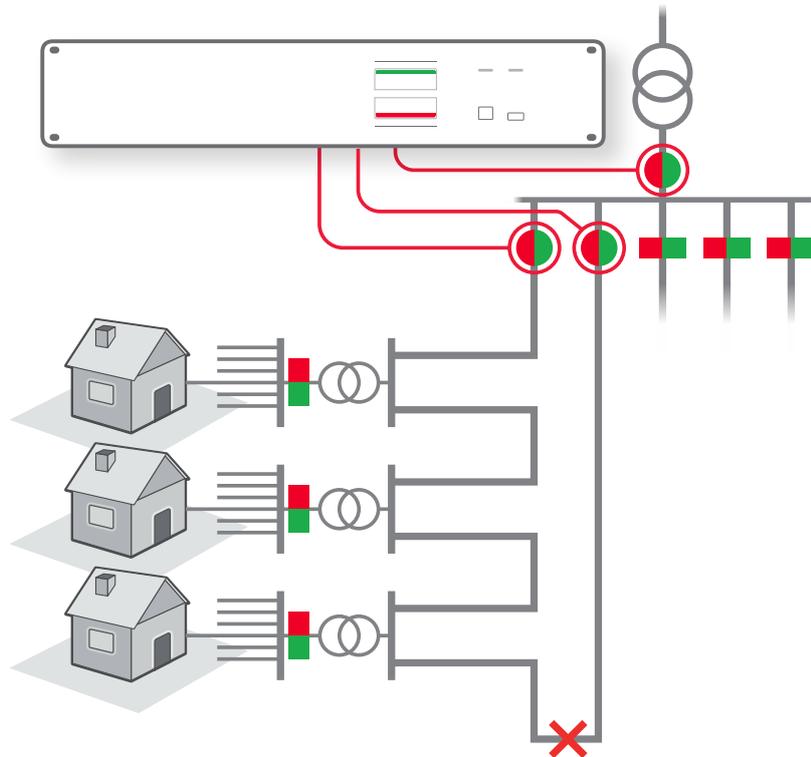


Clear information (red/green)



Statistics - Telling where maintenance should be prioritized

# ONE INSTRUMENT – MULTIPLE APPLICATIONS



## Fault Recorder

The new PQX3-FR instrument is a full feature Fault Recorder. The digital inputs can be used to trigger different events such as breaker switchings and the instrument then records high-speed waveform data on all channels.

## High Frequency Measurement

The new PQX3-FR instrument has improved measurement performance and uses high-sampling rate and multiple measurement channels. This gives improved disturbance detection plus extended harmonic measurement range including measurement of "Supra-harmonics (2-150 kHz)".

## Multiple Current Channels

The PQX3-FR instrument is module built and equipped with multiple current channels. This allow measurements on many different feeders only using one instrument.

## WIFI

For easiest possible access and real-time analysis on-site the new instrument also supports WIFI-communication.

## Global communication protocol IEC 61850

The PQX3-FR instrument supports many different communication protocols to be able to deliver data to external system solutions like SCADA. This also includes the IEC 61850.

## Advanced/Powerful instrument platform

The PQX3-range is based on a high-performance solution and includes several intelligent circuits. The measurement data is stored using Linux that allows a quick and reliable storage and data transfer to the central system.

# Technical Specification

Parametrar	Specification	Information	PQX3-FR
<b>Inputs/Outputs</b>			
Voltage Inputs	0-460 V RMS	Differential voltage inputs (+/-), 51,2 kHz/channel	4
Voltage HV Inputs	0-6 kV peak	Built-in high frequency inputs (2 MHz)	4
Current Inputs	0-10 A RMS	Differential current inputs (+/-), 51,2 kHz/channel	9
General Inputs	4-20 mA	General measurement inputs	4
Digital Inputs	20V peak - 400V peak	Digital inputs supporting FR-options	16
Digital Outputs	Max 350Vpeak (0.1 A)	For alarm and control	8
<b>Power Supply</b>			
Power Supply Range	85-264 VAC / 110-350 VDC	(47-63 Hz)	Yes
Internal Backup			Yes
<b>Norm conformity</b>			
IEC 61000-4-30, Class A	< 0,1 %	Reference instrument	Yes
IEC 61000-4-7		Harmonic measurements	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, Netcode NL, ZS387 etc)		Wide range of standards supported	Yes
User defined reports		Calculated in the instrument	Yes
Storage intervals		Selectable storage intervals	Yes
PQDIF format		Optional export	Yes
<b>Hardware</b>			
Memory			32 GB
Sampling-rate, U/I Standard Inputs		Selectable sampling frequency	51.2 kHz
Sampling-rate, HV Inputs			2 MHz
Accuracy		IEC 61000-4-30, Class A	< 0,1 %
Resolution (U/I)		Voltage/Current Inputs	16 bit
Resolution (GI)		General Inputs	12 bit
Input Impedance - Voltage Inputs			10 MOhm
Input Impedance - Current Inputs			25 mOhm
Anti-alias filter			Yes
PLL-synchronisation			Yes
<b>Communication</b>			
RS-232		Modem port	Yes
USB		Computer port	Yes
USB 2		Data storage	Yes
Ethernet port 1 (RJ-45)		Ethernet port	Yes
Ethernet port 2 (RJ-45)		For redundancy	Yes
CL-port		For current loop	Yes
RS-485		For multidrop communication	Yes
Time synchronization port		For external time synchronization (IRIG-B)	Yes
WIFI		WIFI communication (Optional)	Yes
<b>Communication protocol (optional)</b>			
MODBUS-TCP protocol			Yes
IEC 61 850 protocol			Yes
<b>Mechanical data</b>			
Size (Width x Height x Depth)		440 x 88 x 294 mm	
Model		19" Rack	
IP rating		IP54	
Weight		4.25 kg	
Humidity		10 - 85 % non-condensing	
Temperature		10 °C to +55 °C	

- Metrum Sweden AB reserves the right to change information and technical specification described in this brochure -