

ELECTRICAL SAFETY
POWER QUALITY
ENERGY MANAGEMENT



Graphene Power Quality Meter GPM144

- Comply Class A Power Quality Measurement
- Comply with IEC62053 class 0.2S
- Measurement sampling rate of 1024 samples/cycle
- Event waveform recording (8GB memory)

Graphene Power Quality Meter

GPQM144 – Designed for Intelligence



Product Description

The digital universal measuring device GPQM144 is suited for measuring and displaying electrical quantities of electricity networks. The device measures currents and voltages, energy consumption and power, and displays the individual current/voltage harmonics for assessment of the power quality in accordance with DIN EN 50160. The accuracy of active energy measurements corresponds to class 0.2 S in accordance with DIN EN 62053-22.

The GPQM144 is suitable for use in 2-, 3- and 4-wire systems and in their respective versions as TN, TT and IT systems. This allows monitoring single and polyphase systems. With its standardised dimensions of 144 x 144 mm, the device is intended for front panel mounting.

Device Features

- Class A power Analyzer
- Monitoring the quality in accordance with DIN EN 50160
- Accuracy class according to IEC 62053-22: 0.2 S
- High Resolution Failure Record with 1024 point/cycle
- Colorful LCD interface
- Failure diagnose location, 20µs for transient disturbance record
- Supports Failure Diagnose: support voltage sag source, harmonic source, flicker source, asymmetric source location and power supply failure type diagnose
- Full Real-time Data Measurement
- 4 current and voltage inputs
- 8 GB internal memory
- 8 digital input / 4 relay output
- Supports Modbus RTU and TCP

Typical Applications

- Continuous monitoring of the voltage quality in accordance with DIN EN 50160
- Collection of relevant data for energy management systems
- High-resolution waveform recording allows analysis of power quality phenomena

Technical Specification

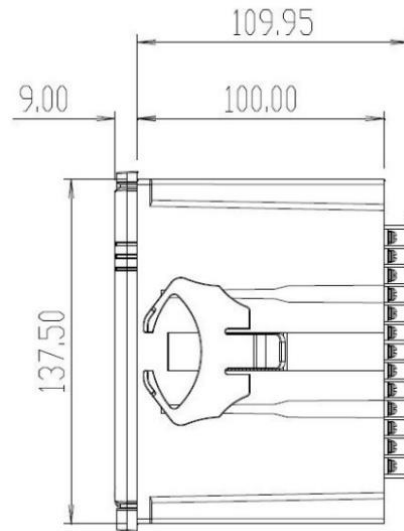
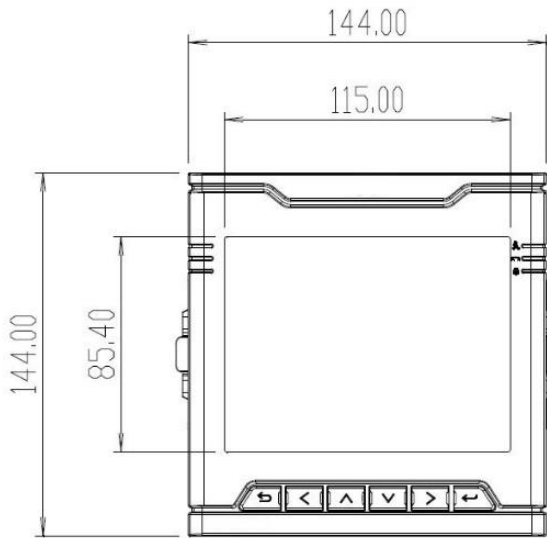
Power Supply	
Rated Voltage (45~65Hz)	AC85~265, DC100~300V
Power Consumption	<10W
Communication / Interface	
RS485 port	2 Port, Modbus-RTU
Baud rate	2400-38400bps
Ethernet Port	1 port, Modbus TPC / IEC61850 (optional)
Digital Input (DI)	8 Channels
Relay Output (DO)	4 Channels
RO1-RO4	Relay, action / return time: <10ms
Optocoupler Output	2 Channels
	Breaking Capacity: 250VA/30VDC, 0.2A L/R=20ms Max. voltage 30VDC Max. current 50mA

Measuring circuit	
Measuring voltage inputs	
Rated voltage	0~400V (400V L/N / 690V L/L)
Overload	1.2 Un, Continuous; 4Un, accept 1s
Power loss	<0.1VA/Phase
Measuring current inputs	
Rated Current	5A, 1A
Overload	4In, Continuous; 10In, accept 1s
Power loss	<0.5VA/Phase@5A, <0.1VA/@1A
Accuracy	
Voltage/ Current	±0.1%
Re-,Active/Apparent power	±0.2%
Active Energy	Class 0.2s
Reactive Energy	Class 2
Power Factor	±0.5%
Frequency	±0.005Hz
Harmonic	Class A
Voltage Unbalance	±0.1%
Current Unbalance	±0.5%
Voltage Deviation	±0.1%
Frequency Deviation	±0.005Hz
Flicker	±5%

Environment/EMC	
Temperature	-10°C~+55°C
Storage	-40°C~+85°C
IP Index	Front: IP52, Side & Back: IP30
Humidity	5%~95%
Pressure	70kPa~110kPa
Measure mode	3 phase 4 wire, 3 phase 3 wire

Measurement Parameters	
Power Quality Analysis	
Wave Sampling	1024 points/cycle wave
Harmonic	2~63rd Harmonic,
Inter-Harmonics	2~63rd Inter-harmonic
Voltage Sag/Swell/Stop	Waveform record
Transient Capture	20us circle wave transient
Unbalance	Voltage-, current- and zero sequence
Voltage/Freq. Deviation	Setpoint alarm and record
Rapid Voltage Alteration	Trigger DO point, waveform record
Sag Source Location	locate power supply side load side abnormal and fault
Real-time Data	Voltage, Current, Active power, Reactive power, Apparent Power, Power Factor, Frequency
Measurement Channel	4 channel for each: Voltage / Current
Energy	
Energy	Positive / Negative active, reactive, apparent energy; Positive / Negative base wave active, reactive energy
Harmonic Energy	2~31st positive active reactive harmonic energy, Negative active, reactive harmonic energy
History Energy	Storage latest 30 days and latest 12 months history energy data
Multi-tariff energy	4 tariff, 8 time period, 2 time zone
Demand	
Real-time Demand	fixed- and slide window record value
Predict Demand	Interval demand fixed circle: 15min
Data and Event Record	
Memory	8GB
Max. / Min Record	Current and last month (min/max value and time)
SOE Record	1024 records, time resolution: 1ms
PQ Record	1024 records, time resolution: 1ms
ITIC Curve	1 Group
EN50160	EN 50160 statistic function
Mark Function	Mark voltage sag/ swell/ stop etc.
Other	
Dielectric strength	2kV voltage, 1 minute
Insulation resistance	No less than 100MΩ
Impulse voltage	6kV, 1.2/50μs
Electrostatic discharge immunity	IEC 61000-4-2-III
Radiated, radio-frequency, electromagnetic field immunity	IEC 61000-4-3-III
Electrical fast transient/burst immunity	IEC 61000-4-4-IV
Surge immunity	IEC 61000-4-5-IV
Power frequency magnetic field immunity	IEC 61000-4-8-III

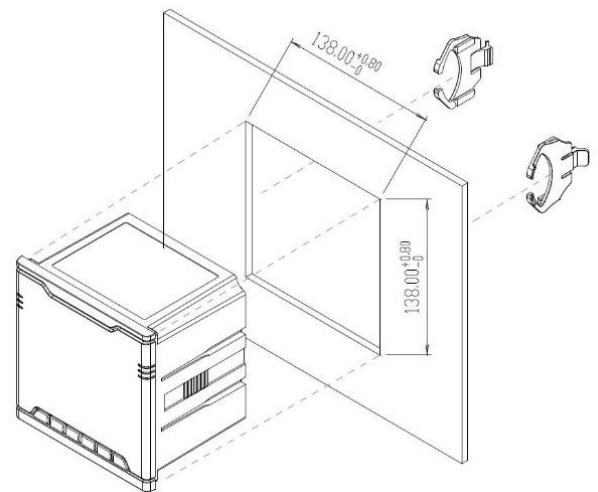
Dimensions & Ordering Code



Ordering Code for GPQM144

GPQM144	Eetarp Product Fixed Code
X	Reserved
X	Reserved
X	1 = 110V PT / 5A 2 = 110V PT / 1A 3 = 400/690V (direct), 5A 4 = 400/690V (direct), 1A
C	Modbus RS485 + Modbus TCP/IP
X	D = digital input dry contact W = digital input wet contact
X	I = IEC61850 Protocol X = Without IEC61850 protocol
X	Reserved
X	Reserved

e.g. GPQM144XX3CDXXX (400/690V, 5A, Modbus RTU+TCP and DI)



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