

# DIGITAL PANEL METER

## Introduction

Blue Jay digital panel meter is a digital alternative to analog display instrument, which has lower cost for installation and can make full use of panel space. It is suitable for indication and monitoring of single-phase or three-phase circuits, accepts various inputs (such as voltage, current, frequency, etc.), provides alarm relay, analog signal transmission and optional pulse output.

We supply high-quality, high-precision BPM series standard digital panel meters and APM series multi-function digital panel meters, which can be used to measure various electrical parameters, including voltage, current, frequency, etc. The large LCD screen helps you easily read the digital results displayed on it.



## Reference Standards

### Measurement standard

Active energy	IEC 62053-22:2003
Reactive energy	IEC 62053-23:2003
Basic electricity	IEC 61557-12:2007

### LVD test standard

IEC/EN 61010-1	2017, CATIII-300V
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### EMC test

Discharge immunity	IEC 61557-12:2007
Fast transient burst immunity	IEC 62053-22:2003
Surge (Shock) immunity	IEC 62053-23:2003

## Application

- Remote data reading.
- Power quality analysis.
- Harmonic measurement.
- Commercial, industrial, utility.
- Medium and low voltage systems.
- Alarm station with voltage-free digital inputs.
- Metering of distribution feeders, transformers, generators, capacitor banks and motors.

## Measurement Parameter

Voltage	Va, Vb, Vc / Vab, Vbc, Vca
Current	Ia, Ib, Ic
Power	Pa, Pb, Pc, Psum
Reactive power	Qa, Qb, Qc, Qsum
Apparent power	Sa, Sb, Sc, Ssum
Frequency	Fra, Frb, Frc, Fr
Power factor	PFa, PFb, PFc, PF
Active energy	Ep_imp, Ep_exp, Ep_total
Reactive energy	Q_imp, Q_exp, Q_total
Voltage THD *	THD_U%, THD_I%
Harmonic	2~15 <sup>th</sup> / 2~31 <sup>th</sup> / 2~63 <sup>th</sup>
Multi- tariffs	3 Month, 4 Tariffs, 12 Segment
Max demand	Um, Im, Pm, Qm
Power quality	Voltage Drop / Flicker / Unbalance

# BPM SERIES STANDARD DIGITAL PANEL METER

DIGITAL PANEL METER



## Introduction

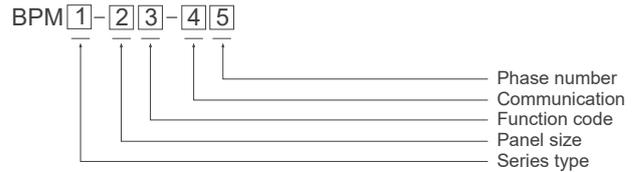
BPM series standard digital panel meter especially developed for indication and supervision of the three-phase circuit, replaces an analogical display meter, reducing installation procedure and optimizing utilization of panel space.

It's ideal for protection of single phase or three- phase networks, it is monitored and usually have superior and subordinate alarms. Protection of the parameters of programming by password.

## Main Features

- Measurement functions include: current, voltage, three-phase total power, power factor, frequency.
- 0.5% high-precision measurement.
- Large HD LED screen display.
- Password protected programming parameters.
- Protection for single-phase and three-phase networks.
- ITF technology: input and output current insulation protection.
- RS-485 communication, optional expandable I/O modules.
- Various installation sizes, excellent panel space utilization.
- Wide range power supply (85-265VAC/DC)

## Ordering Information



Num.	Code	Description
1	2	Basic type
	3	Economic type
2	96	96(W)x96(H)x71(D)mm
	72	72(W)x72(H)x71(D)mm
	80	80(W)x80(H)x71(D)mm
3	U	Voltage meter
	I	Current meter
	P	Active power meter
	Q	Reactive power meter
	H	Power factor meter
	F	Frequency meter
	UI	Voltage & current combine meter
	UIF	Voltage & current& frequency combine meter
	PQH	Power & power factor combine meter
	E	Economic multifunction meter
4	Blank	Without this function
	R	With RS485 interface, Modbus-RTU
5	1	Single-phase
	3	Three-phases

Note: BPM2 series only can select from num.2-4.

## Measurement Function

Model	BPM2/3 -96U	BPM2/3 -96I	BPM2/3 -96P	BPM2/3 -96Q	BPM2/3 -96H	BPM2/3 -96F	BPM3 -96UI	BPM3 -96UIF	BPM3 -96PQH	BPM3 -96E
<b>Parameter</b>										
Voltage	●	-	-	-	-	-	●	●	-	●
Current	-	●	-	-	-	-	●	●	-	●
Active power	-	-	●	-	-	-	-	-	●	●
Reactive power	-	-	-	●	-	-	-	-	●	●
Power factor	-	-	-	-	●	-	-	-	-	●
Frequency	-	-	-	-	-	●	-	●	●	●
Active energy	-	-	-	-	-	-	-	-	-	●
Reactive energy	-	-	-	-	-	-	-	-	-	●
<b>Expansion module</b>										
Analog output	-	-	-	-	-	○	○	○	○	○
Digital output	-	-	-	-	-	○	○	○	○	○
Energy pulse output	-	-	-	-	-	○	○	○	○	●

●With this function ○Optional function -Without this function

## Technical Characteristics

Model	BPM2	BPM3
<b>Current measurement (TRMS)</b>		
CT secondary	1 or 5 A True RMS	
Measurement range	0 ... 11 kA	
Input consumption	<0.4 VA	
<b>Voltage measurement (TRMS)</b>		
Measurement range	18 ... 400 VAC True RMS	
PT secondary	100VAC or 400VAC	
Frequency	50 / 60 Hz	
Input consumption	<0.1 VA	
<b>Frequency measurement</b>		
Measurement range	45 ... 65 Hz	
Accuracy	±0.02Hz	
<b>Measurement accuracy</b>		
Voltage, current	0.50% (IEC 61557-12)	
Active power, reactive power	0.50% (IEC 62053-12)	
Active energy	Class 1.0 (IEC 62053-22)	
Reactive energy	Class 2.0 (IEC 62053-23)	
<b>Power supply</b>		
AC voltage	220VAC	85-265V AC/DC ± 10 %, Optional 20-60VDC
Consumption	≤4VA	
<b>I/O Module</b>		
Pulse outputs (PO)	NONE	Equipped on meter with energy meter function
Quantities	/	Optional 1 - 2 channel
Pulse constant	/	5000imp/kWh 20000imp/kVarh
Optocoupler isolation capability	/	2kVac r.m.s
Relay outputs (DO)	/	Optional 1 - 4 channel
Load capacity	/	5A@250Vac or 5A@30Vdc
Digital inputs (DI)	/	Optional 1 - 6 channel
Quantities of port	/	96mm size meter max 6*DI 80mm and 72mm size meter max 4* DI
Load capacity	/	Ri<500Ω turn on, Ri>100kΩ turn off
Analog output (AO)	/	Optional 1 - 3 channel, current 4~20mA,
Load capacity		load <390Ω, or 0~10V, load >100KΩ
Quantities of port	/	96mm size meter max 3*AO 80mm and 72mm size meter max 1* AO
<b>Communication</b>		
Protocol	/	Modbus RTU
MODBUS speed	/	4800 / 9600 / 19200 bauds
<b>Others</b>		
Calibration environment	27°C ± 5°C	
Operation environment	0 to 50°C, RH < 70%	
Storage environment	-10 to 60°C, RH < 70%	
Weight	Appx.300-400g	Appx.300g
Dielectric strength (AUX terminal)	2 kV at 50Hz for 1 min	