



## **TIANJIN GREWIN TECHNOLOGY CO.,LTD**

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# 1.Introduction

EPM300A-1-2 is intelligent multi-function power which integrates the remote measuring, remote communication and remote control functions.

This meter could test, display and Remote Transfer all the common power parameters,4-ch digital inputs,2-ch relay output, duplicate tariff statistics, SOE record, Off-limit Alarm,2~31st harmonic monitoring, max.& min. value statistics. And communicate with the computer to be a intelligent monitoring system.

## 1.1 Outlook

- Meter dimension size:96\*96\*71mm
- Panel size:96\*96mm
- Slot size:90.5<sub>-0.0</sub><sup>+0.5</sup> mm × 90.5<sub>-0.0</sub><sup>+0.5</sup> mm
- Min. depth is 80mm



## 1.2 Panel introduction

Introduction:

### 1.Current parameter:

U:voltage

I:current

F:frequency and power factor

P/Q/S: power

### 2.Max.& Min. value

### 3.Three phase unbalance factor

### 4.Load:

Capacitance load(upper)

Inductive load(below)

### 5.Electrical degree:

Lmp:depleting

Exp:issue

Total:total

### 6.Time

### 7.DI condition

### 8.DO condition

### 9.Units:

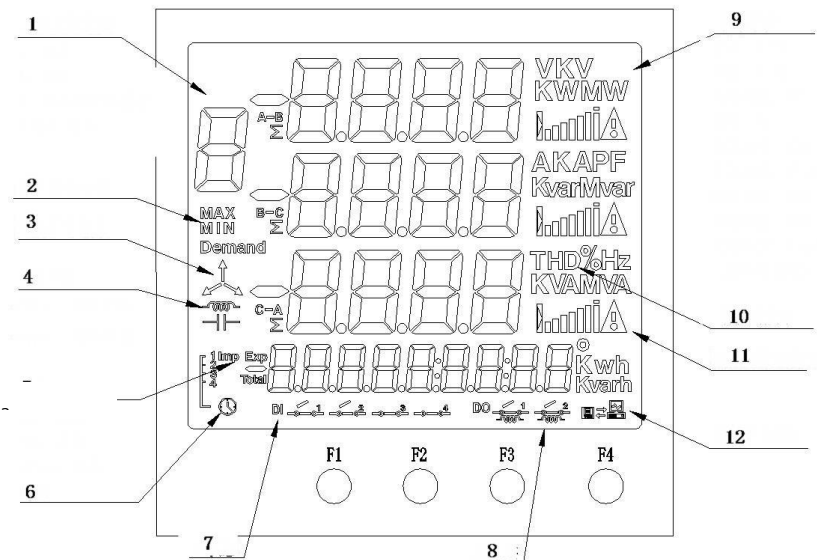
Current:A KA

Voltage:V KV

Power factor:PF

Frequency:Hz

Active power:KWA



Apparent power:KVA

Active electric energy:KWh

Reactive electric energy:Kvarh

Three phase unbalance degree:%

### 10.Harmonic distortion rate

### 11.Current load rate

### 12.Communication condition

## 2. Functions

### 2.1 Basic function

#### 2.1.1 Display & measure

- Voltage
- Current
- Voltage unbalance degree
- Current unbalance degree
- Current load degree
- Active power, reactive power and apparent power
- Power factor
- Frequency
- Total active energy absolute ,total reactive energy absolute
- Input active energy absolute, input reactive energy absolute
- Output active energy absolute, output reactive energy absolute
- 4 quadrants reactive energy

#### 2.1.2 Harmonic analysis:

THD(voltage/current),THD(odd/even),2~31 times harmonic component occupancy

#### 2.1.3 Load type:

Indicate the current load type:

Capacitive load or Inductive load

#### 2.1.4 Remote transfer:

2DI real time switch-status monitoring, electric level and impulse output setting

#### 2.1.5 Remote signaling:

4 channel DI real time switch-status monitoring

#### 2.1.6 Off-limit alarm style

Support over current, under voltage, over voltage, under frequency, over frequency, under power factor off-limit alarm

#### 2.1.7 Remote communications

- Communication interface:RS485
- ModBUS-RTU protocol

#### 2.1.8 SEO record: max. 64 alarms and DI events

2.1.9 Demand record: record the max. Demand of total active power(+/-), demand and occurrence time of the max. Demand of total reactive power(+/-) of this month and the last month.

2.1.10 The mix./min. Value of the current, voltage, frequency, power factor, active/reactive/apparent power and the occurrence time of the max./min. value.

#### 2.1.11 Multi-tariff: max. 8 schedules and 4 tariffs

#### 2.1.12 Display: real time parameter, DI/DO status

#### 2.1.13 Factors setting and register when power off suddenly

## 2.2 function description

### 2.2.1 Off-limit alarm

Support over current, under voltage, over voltage, under frequency, over frequency, under power factor off-limit alarm and SOE

When the parameter is beyond limit, the alarm time is over the TK, and will trigger with position alarm and record the SOE. Otherwise, alarm disappear. Reference fig.1

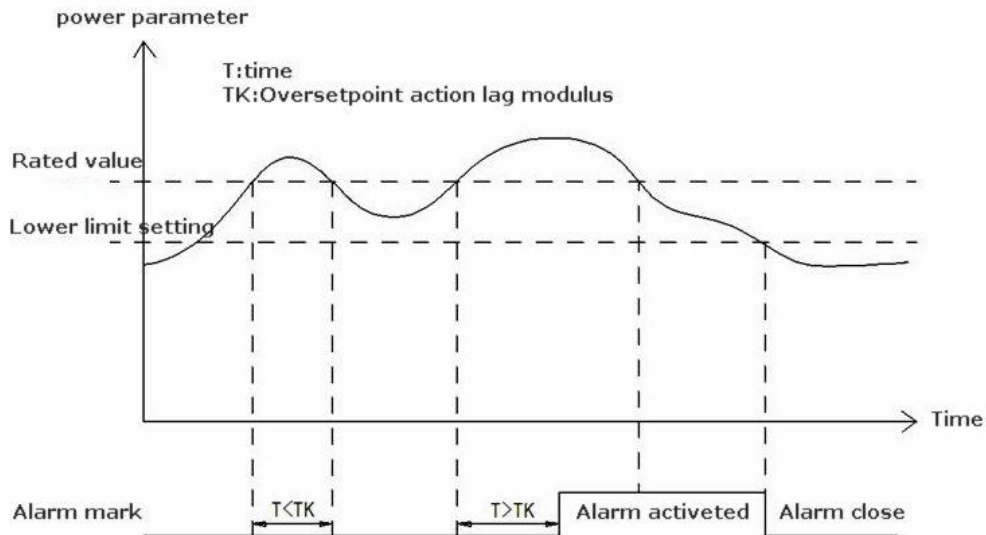


Fig. 1 Off-limit work principle

### 2.2.2 Demand statistic

Record the max. Demand of total active power(+/-), demand and occurrence time of the max. Demand of total reactive power(+/-)and the occurrence time.

Adopt sliding window mode, interval is 15 min. The demand value is the average value of the 15 times sampling value in the last calculates period. Display data update one time for every minute. Save the max. Value of month in the UNIT of last Month Max. Value when the end of every month while clean this max. value.

### 3. Specification

ITEMS		NOTES	
Input Test Display	Web	3P3L,3P4L Configuration	
	Voltage	Rated value	AC400V or AC100V Optional
		Overload	Measurement:1.2 times, Instantaneous 2 times/10s
		Consumption	<1VA per phase
		Impedance	>400kΩ
		Precision	RMS measurement Precision ±0.2%
	Current	Rated value	AC5A or AC1A
		Overload	Continued 1.2 times Instantaneous 10 times/10s
		Consumption	<0.4VA per phase
		Impedance	<20mΩ
		Precision	RMS measurement Precision ±0.2%
	Frequency	40~60Hz Precision ±0.02Hz	
	Power	Active power, reactive power, apparent power Precision ±0.5%	
Energy	<ul style="list-style-type: none"> <li>● Total active energy absolute .Total reactive energy absolute</li> <li>● Input active energy absolute. Input reactive energy absolute</li> <li>● Output active energy absolute</li> <li>● Output reactive energy absolute</li> <li>● 4 quadrants reactive energy</li> <li>● Precision active-energy ±0.5%,reactive-energy ±1%</li> </ul>		
Display	<ul style="list-style-type: none"> <li>● LCD display</li> <li>● Modbus communication to change the display interface</li> </ul>		
Digital input	Input	2-ch input, passive node isolation	
	Isolation Voltage	2500Vrms	
Digital output	Output	2-ch output, mechanical contact(passive)	
	Voltage	Max.:AC250V DC30V	
	Current	Max.:5A	
SOE	Resolution	1ms	
	Record numbers	Max.64	
Comm.	Interface	RS485	
	Protocol	ModBUS-RTU	

	Baud rate	2400/4800/9600/19200bps
	Data format	Odd parity check, even parity check, none parity check
Working power	Working voltage	AC:85V~265V or DC:100V~360V
	Power consumption	≤2VA
Work environment	Work temperature	-20℃~55℃
	Storage temperature	-40℃~85℃
	Humidity	0~95% non-condensate
Safe	Insulating strength	Between input/output/hull/power supply: 2kV Acrms, 1 min.
Dimension weight	Size	96mm×96mm×71 mm
	Weight	0.4kg

#### 4. EMC standard

TEST ITEMS	LEVEL	STANDARD
high frequency anti-jamming test	III, IV	GB/T 15153.1/1998
electrostatic discharge anti-jamming test	III	GB/T 15153.1/1998
electrical fast transient anti-jamming test	IV	GB/T 17626.4-2008
surge anti-jamming test	IV	GB/T 15153.1/1998
power frequency magnetic fields anti-jamming test	IV, V)	GB/T 17626.8-2006

Contact with us if any problems during the using!