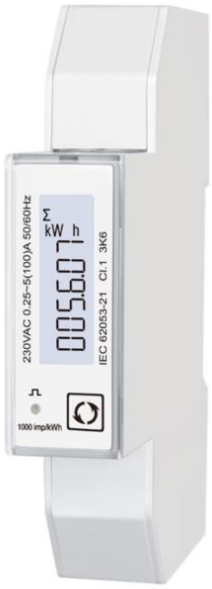
Single-phase multifunction energy meter XK5100D Series

User Guide V1.0



Chapter 1. Overview

1. Introduction

XK5100D series products are single phase multi-function DIN rail installtion energy meter. This series of products can provide a variety of electrical energy parameters measurement, such as two-way active energy, mulit-tariff active energy.This series of products also can support the analysis of electric power parameter measurement in one phase two wires grid environment, is suitable for power monitoring for photovoltaic inverter ,new energy electricity consumption statistic analysis,real time power monitoring and a variety of other environments, has the multi-function, high stability and long life characteristics. It adopt the design of LCD and touch-sensitive key, which can easily carry out the local view and set operation of various parameters. The product has the function of password protection, which ensures the data security of the product.

2. Characteristics

- Maximum current 100A direct access.
- DIN Rail mounting, standard 1 modulus width.
- Touch button design improves button operability and reduces button failure rate.
- support bidirectional energy metering, mulit-tariff electric energy metering.
- Supports one optocoupler pulse output interface, and output parameters can be set.
- LCD refresh time is 1 second, support manual or automatic scroll display (configurable)

3. Parameters

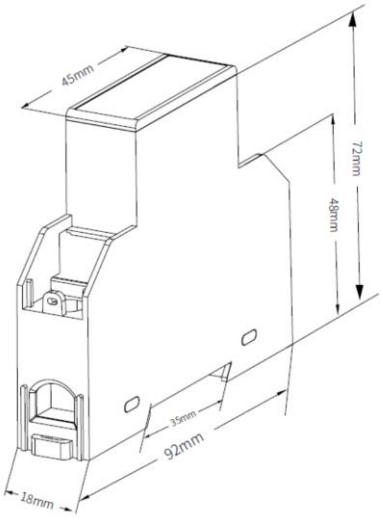
1. The Unit can measure and display	
Energy Values (include: import, export, import + export)	
Active energy	0 to 999999.999 kWh (LCD display number of digits: 4+2 -> 5+1 -> 6+0)
Multi-Tariff active energy (T1 - T4)	0 to 999999.999 kWh (LCD display number of digits: 4+2 -> 5+1 -> 6+0)
2. The Unit can settable	
Pulse output class	pulse output type, pulse constant, pulse output width
System configuration class	User password (HMI)
Time class	Automatic scroll display time, Backlit time, System time (RTC), Tariff time

4. Specification

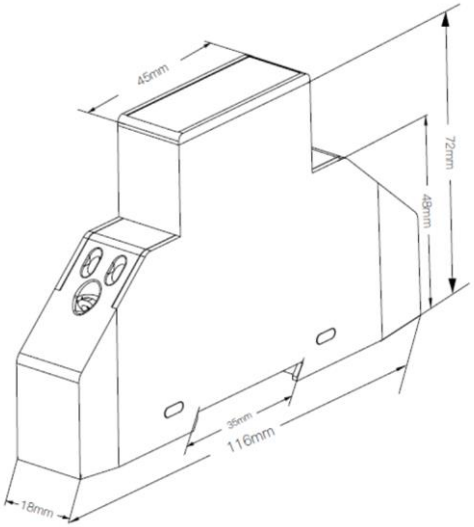
Electrical Characteristics		
Type of measurement		RMS including harmonics on AC system, support Single Phase Two Wire
Measurement accuracy	Active energy	Class 1 / 0.5S, according IEC 62053-22, IEC 61557-12
Input-Voltage	Rate voltage (Un)	230 Vac / 110 Vac (Option)
	Direct connection	Measured range : 176 to 275 Vac / 85 to 144 Vac (Option)
	Frequency range	45 to 65 Hz
	Overload capacity	2*Un for 1 second
Input-Current	Measured range	0.005 to 100 A, basic current (Ib) is 5A
	Overload capacity	30*Imax for 0.01 second
Pulse output	Interface type	Open collector optocoupler

	Pulse constant	1000 / 100 / 10 / 1 imp/kWh (Configurable)
	Pulse width	60/100/200 milliseconds (Configurable), default is 100milliseconds
	Pulse output type	Import/export/total active energy (Configurable)
	Class	Class A, according IEC 62053-31
	Input voltage	5 ~ 27 Vdc
Pulse indicator light on the panel		Pulse constant is 1000imp/kWh
Real-time clock accuracy		0.5 s/d
Mechanical Characteristics		
IP Degree of Protection (IEC 60529)		Designed to IP51 front display, IP30 meter body
Dimensions (W x H x D)		18 x 116 x 72 mm
Mounting Position		DIN Rail mounting
Material of meter case		UL 94 V-0
Environmental Characteristics		
Operating Temperature		-25 to +55℃
Storage Temperature		-40 to +80℃
Humidity		< 90%, non-condensing
Pollution Degree		2
Altitude		Up to 2000m
Vibration		10 Hz to 150Hz, IEC 60068-2-6
Electromagnetic Characteristics		
Electrostatic Discharge		Level 4, according IEC 61000-4-2(1)
Immunity to Radiated Fields		Level 3, according IEC 61000-4-3(1)
Immunity to Electrical Fast Transients		Level 4, according IEC 61000-4-4(1)
Immunity to Surges		Level 4, according IEC 61000-4-5(1)
Immunity to Conducted Disturbances		Level 3, according IEC 61000-4-6(1)
Immunity to Magnetic Fields		IEC 61000-4-8(1)
Immunity to Voltage Dips		IEC 61000-4-11(1)
Radiated Emissions		Class B, according EN55011
Conducted Emissions		Class B, according EN55011
Harmonics		IEC 61000-3-2(1)
(1): The experimental test is carried out according to the grade requirements of industrial grade products in IEC61326-1		
Safety		
Measurement Category		CAT III, according IEC 61010-1
Overvoltage Category		CAT III, according IEC 61010-1
Insulation		AC Voltage Test: 4kV for 1 minute
		Impulse Voltage Test: 6kV - 1.2/50μS waveform
Protective Class		II, according IEC61010-1

5. Installation dimensions



Dimensions without terminal cover



Dimensions with terminal cover