

# Single phase Din-rail kWh Meter

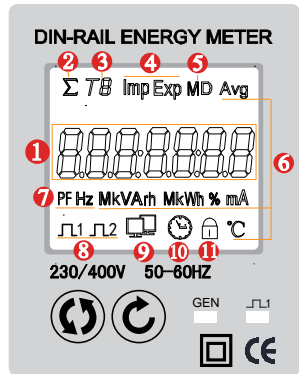
## 1. Function introduction

- measure and display active/reactive energy, power, frequency, Max demand, voltage, current and other important power parameters
- Provide energy import and export measurement (IMP & EXP)
- High light white backlit LCD screen
- Energy pulse output
- RS485 Modbus communication
- Standard 35mm din rail mounting
- Maximum 100A current access
- Accuracy: Class 1.0s

The single phase kWh meter is suited for single-phase measurement in residential, public facilities, and industrial areas. The meter can measure and display various important power parameters and the communication ports support remote reading and monitoring. Bi-directional metering makes it an excellent choice for solar and other energy generating industries.

### Panel & Screen introduction

- 1-7 digital show energy value
- 2.-Symbol for SUM energy record value
- 3.- Symbol for multi-tariff function
- 4.-Imp for energy consumption, Export for energy generate
- 5.-Symbol for Maximum demand
- 6.- Symbol for average value
- 7.-PF=power factory; Hz=Frequency
- 8.-Pulse output channel 1 and channel 2
- 9.-symbol for communication active
- 10.- symbol for timer
- 11.- symbol for screen locked



Click for "left", can move cursor to left or change to forward screen  
Press and hold for Enter operation menu

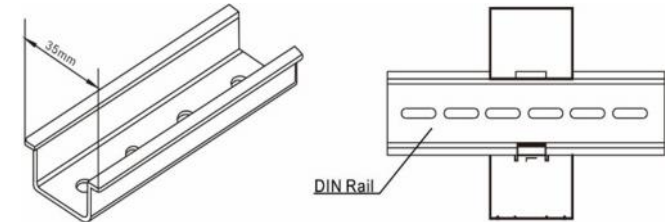
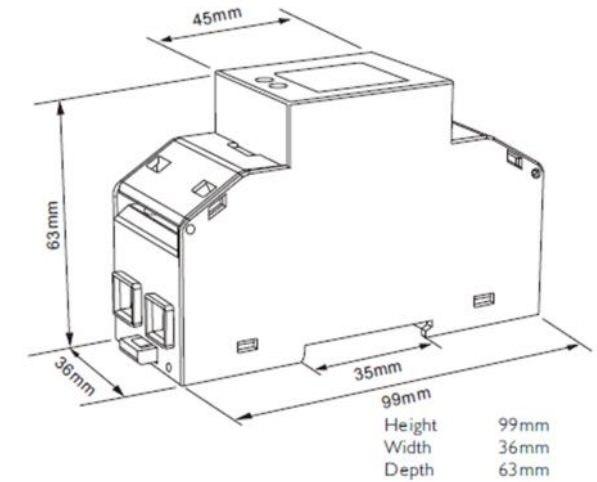
Click for "right", can move cursor to right or change to next screen  
Press and hold for confirm setting

## 2. Specification

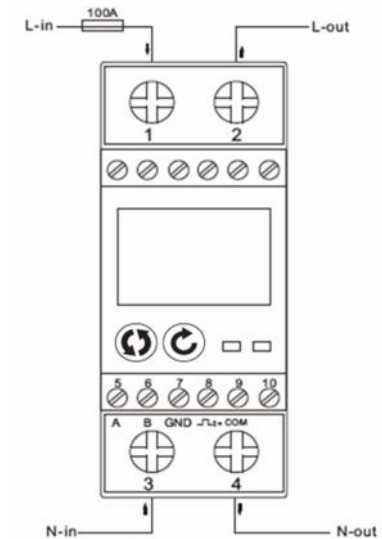
Measurement & Display	
Voltage	Rated 230V RMS value, Accuracy 0.5%,
Current	Rated 10A, Max 100A, Start amp 0.04A, RMS value. Accuracy 0.5%; Overload 30times In in 0.01sec
Frequency	50/60Hz, Accuracy $\pm 0.01$ Hz
Display	LCD with white backlit
Maximum display value	9999999MkWh
AUX Power	85-275V AC, <2W/10VA
Output	
Digital port	RS-485 MODBUS-RTU
Pulse port	1600imp/kWh
Other	
Working environment	-25~55°C Altitude $\leq 2500$ m, 0~95%RH, non-condensing, non-corrosive gas
Storage environment	-40~70°C
Voltage tolerance	2KV 1min
Shock voltage	6KV-1.2uS waveform
Insulation	Input, output, power supply to Shell >5M $\Omega$

## 3. Install of meter

Dimensions (L x W x H)	Din-rail	Notes
99x36x63(mm)	35mm	





## 4. Wiring to grid



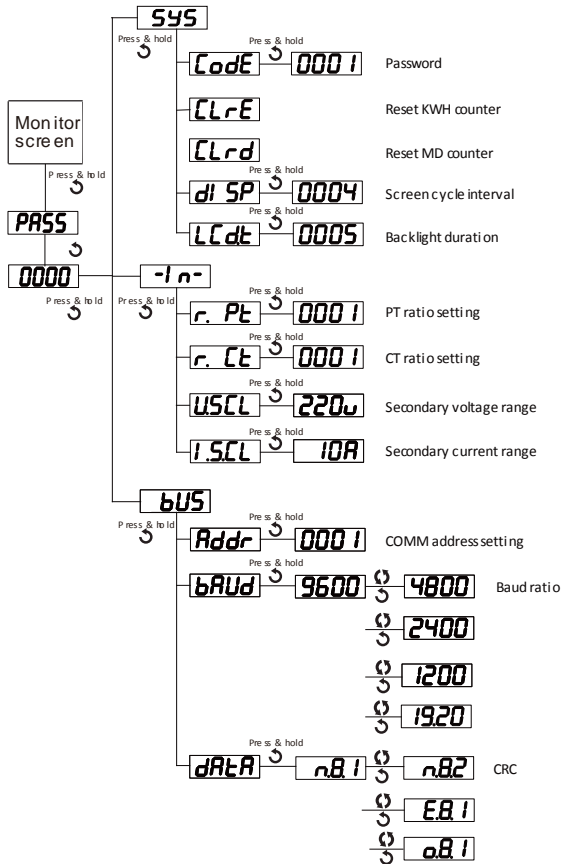
### Wiring Notes!!

- Suitable cable sizes must be selected according to max current, please refer the meter measurement range and actual load condition.
- The communication wire must be single twisted pair Mylar screened cable (0.22 or 0.5mm).
- Communication line RS485+, RS485- cannot be reversed.
- Communication over long distances must be supported by parallel connected 100~120 ohm resistors.
- In 9600 baud rate, the cable length should less than 1000 meters.

### 5. Operation menu description

When in the regular measurement screen, press  and hold to access the operation screen. The main screen will display "Pass", press and hold  to enter the password entry screen (default password is 0001)

#### Menu tree stretcher



### MODBUS register map:

Primary Parameters (Read Holding Register CMD 03)				
Address	Data	Byte mode		Notes
001	U	float	2	Phase to Line Voltage, Unit: V
013	I	float	2	Current, Unit: A
019	P	float	2	active power, Unit: kW
027	Q	float	2	reactive power, Unit: kVAR
035	S	float	2	apparent power, Unit: kVA
043	PF	float	2	power factor, 0~1.000
051	FR	float	2	Frequency, Unit:0.01Hz
053	Ep+	float	2	Positive active energy, Unit: kWh
055	Ep-	float	2	Negative active energy, Unit: kWh
057	Eq+	float	2	Inductive reactive power, Unit: kVARh
059	Eq-	float	2	Capacitive reactive power

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