

SOLAR PV

Solution



Solar PV panels can not operate well, without AC switching & Isolation, AC/DC leakage protection, AC metering, DC metering, PV metering, Bi-directional metering... Let' s discover more details:

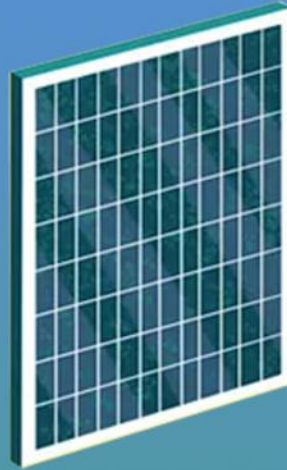
- 1.AC switching & isolation
- 2.AC/DC leakage protection
- 3.DC metering
- 4.PV metering
- 5.Bi-directional metering

Three Main Solar Panel Types



Monocrystalline

- Pure silicon
- 24.4% efficiency
- Moderate cost
- Longest Lifespan
- 38.1g CO₂-eq/kWh



Polycrystalline

- Melted silicon crystals
- 19.9% efficiency
- Least cost
- Moderate Lifespan
- 27.2g CO₂-eq/kWh

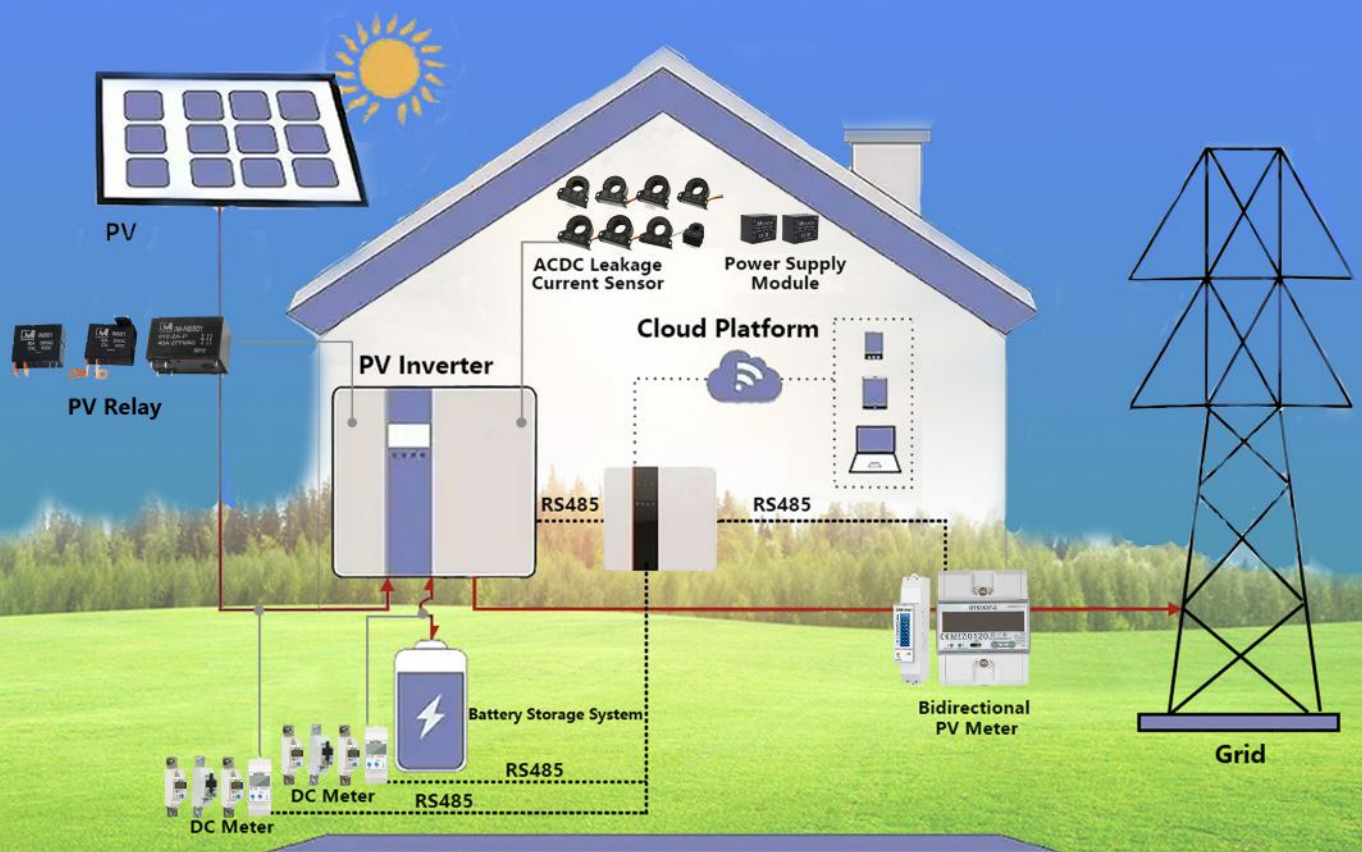


Thin-Film

- Variety of materials
- 18.9% efficiency
- Most Expensive
- Shortest Lifespan
- About 21.4g CO₂-eq/kWh

There are three main types of solar panels commercially available: monocrystalline solar panels, polycrystalline solar panels, and thin-film solar panels. There are also several other promising technologies currently in development, including bifacial panels, organic solar cells, concentrator photovoltaics, and even nano-scale innovations like quantum dots. Each of the different types of solar panels has a unique set of advantages and disadvantages that consumers should consider when choosing a solar panel system. But no matter what kind of solar panels or solar system you used, we have solar parts solutions for you.

Leakage Protection Solution



- High Switching Capacity of 40A/60A/90A
- Single Pole, 2 Poles Optional (1A/1B,2A)
- 3mm Contact Gap, Withstand Voltage 4000VAC
- UL RoHs Certified, IEC61810-1 Standard Compliant
- Specially Designed for Solar PV System



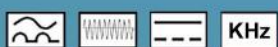
- High Voltage Input Up to 450Vac
- 3 Inputs 1/2 Outputs, Phase Loss Operation
- 5W Output Power Under 500mT Magnetic Field (10mm)
- Withstand Voltage/Anti-Surge Up to 4kVac
- PCB Type Plug-in Installation, Anti-EMI Compliant
- Operating Temp.: -40°C ~ +85°C (Industrial Grade STD)

8+ Great AC/DC Type B/B⁺ RCD

Suits for Leakage Protection of PV Solar



Type B⁺



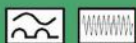
Full type B features.
+Detection of high
frequency currents
up to 20KHz.

Type B



Full type F features.
+Detection of smooth
DC currents.

Type F



Full type A+APR features.
+ Detection of high
frequency currents
up to 1KHz.

Type A-APR



Full type A features.
+High immunity to unwanted tripping.

Type

AC

A

A-APR

F

B

B⁺

Type AC



Alternating
current only.

Type A



Full type AC features.
+Detection of pulsating current
with DC components

DC Metering Series

EM613001/EM613002/EM613005/EM619001

Din Rail Mount DC Power Meter; High Accuracy of Class 1

Measuring Range: 10~240A/2000A, 8~48V/40~400V/5~1000VDC;

External&Internal Shunt Optional,Bi-directional Measurement Optional

RS485/NB-IOT Communication with DTL645/Modbus Protocol

Over-current/ Over-load Alarming

LCD Backlight, Multi-tariffs(RTC), Monthly Records

Built-in Auxiliary Relay for Over-current Disconnect

Hot Markets

India, Australia, Portugal, Brazil, Lebanon, and more renewable energy developing countries



RS485
Communication



Large
Range



High
Precision



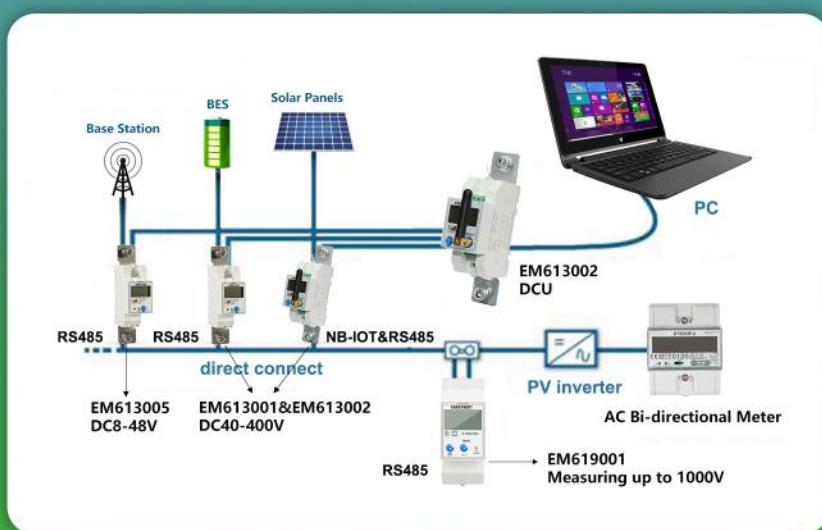
Shunt
Sampling

4 8

4 tariffs with
8 time slots



Scroll
Displaying



Typical Applications



PV/Solar Panel



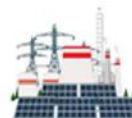
EV Charger



Base Station



Battery Storage
System



Power Generation
System



+86 21 62209608



www.ivy-metering.com



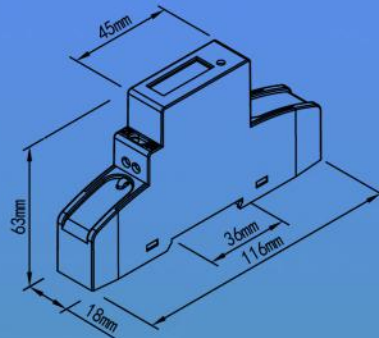
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Net Metering? Dual Metering? There Must Be One Ideal for You, As Long As You Work in **PV/Solar**

Only Forward

Forward-Reverse

Forward+Reverse



EM112129	EM112130	Common
1.Total Energy (Forward+Reverse) 2.SO Output	1.Total Energy (Only Forward) 2.SO Output	Ref. voltage = 230V Ref. current = 5(50)A Constant = 1000imp/kWh Frequency = 50Hz/60Hz Display = LCD 5+2



EM112131	EM112132	Common
1.Total Energy (Forward+Reverse) 2.Forward Energy 3.Reverse Energy 4.SO Output	1.Total Energy (Forward-Reverse) 2.Voltage 3.Current 4.Power(Current Active Power) 5.Frequency 6.Power Factor 7.SO Output	Ref. voltage = 230V Ref. current = 5(50)A Constant = 1000imp/kWh Frequency = 50Hz/60Hz Display = LCD 5+2



EM112133	EM112134	Common
1.Total Energy (Forward+Reverse) 2.Voltage 3.Current 4.Power(Current Active Power) 5.Frequency 6.Power Factor 7.SO Output	1.Total Energy (Only Forward) 2.Voltage 3.Current 4.Power(Current Active Power) 5.Frequency 6.Power Factor 7.SO Output	Ref. voltage = 230V Ref. current = 5(50)A Constant = 1000imp/kWh Frequency = 50Hz/60Hz Display = LCD 5+2

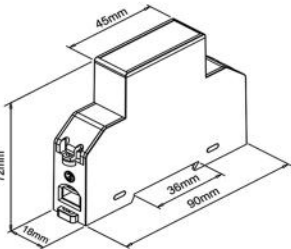


EM112135	EM112136	Common
1.Total Energy (Forward-Reverse) 2.Forward Energy 3.Reverse Energy 4.Voltage 5.Current 6.Power(Current Active Power) 7.Frequency 8.Power Factor 9.SO Output	1.Total Energy (Forward+Reverse) 2.Forward Energy 3.Reverse Energy 4.Voltage 5.Current 6.Power(Current Active Power) 7.Frequency 8.Power Factor 9.SO Output	Ref. voltage = 230V Ref. current = 5(50)A Constant = 1000imp/kWh Frequency = 50Hz/60Hz Display = LCD 5+2



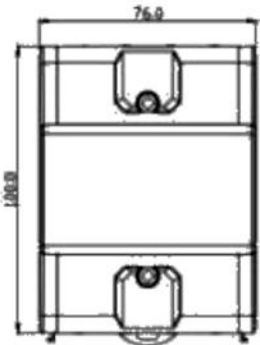
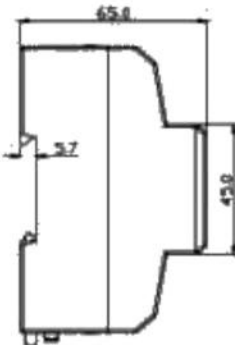
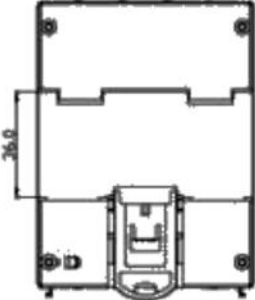
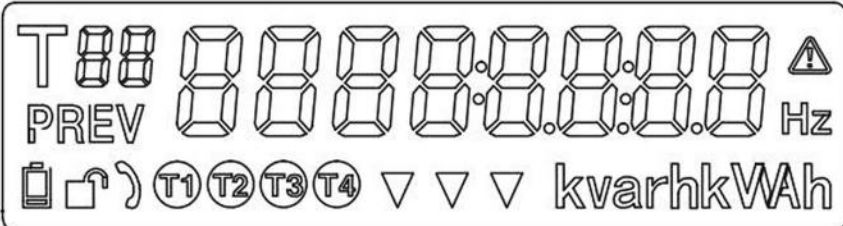
ELECTRICITY

Off the Grid, Get **Bi-directional Meter**

	EM118089	EM118090	EM118091
Type	 	 	 
Dimension			
LCD Display			
Ref. voltage	3*230/400V		
Ref. current	0.25-5(30)A, 5(32)A, 5(40)A, 5(45)A, 5(50)A, 5(80)A		
Software Version	V101	V101	V101
CRC	5A8E	B6C9	6B8D
Impulse Constant	1000imp/kWh	1000imp/kWh	1000imp/kWh
Communication	N/A	RS485 Modbus/DLT645	RS485 Modbus/DLT645
Baud rate	N/A	9600\19200\38400\115200	9600\19200\38400\115200
SO output	Yes, SO1 for Active : with variable constant 100-2500imp/kWh Divisible by 10000 Yes, SO2 for Reactive: with variable constant 100-2500imp/kvarh Divisible by 10000	N/A	N/A
Li-Battery	N/A	N/A	YES
Multi-tariff	N/A	N/A	YES
Pulse width	SO:100-1000:100ms SO:1000-2500:30ms	N/A	N/A
Backlight	Blue	Blue	Blue
Measurement Mode	1-total =forward 2-Total=reverse 3-Total =forward +reverse (default)	1-total =forward 2-Total=reverse 3-Total =forward +reverse (default)	1-total =forward 2-Total=reverse 3-Total =forward +reverse (default)
Button	Touch button	Touch button	Touch button
Button function	Page turning, setting, information display	Page turning, setting, information display	Page turning, setting, information display
Default setting	1000imp/kWh, 100ms 1000imp/kvarh, 100ms	9600/NONE /8/1	9600/NONE /8/1
Measurement Mode setting	Button	RS485 or Button	RS485 or Button

ELECTRICITY

Off the Grid, Get Bi-directional Meter

Type	DTS353F-1 (EM519032)	DTS353F-2 (EM519033)	DTS353F-3 (EM519024)
			
Dimension	  		
LCD Display			
Ref. voltage	3*230/400V	3*230/400V	3*230/400V
Ref. current	0.25-5(30)A, 5(32)A, 5(40)A, 5(45)A, 5(50)A, 5(80)A	0.25-5(30)A, 5(32)A, 5(40)A, 5(45)A, 5(50)A, 5(80)A	0.25-5(30)A, 5(32)A, 5(40)A, 5(45)A, 5(50)A, 5(80)A
Impulse constant	1000imp/kWh, 1000imp/kVarh	1000imp/kWh, 1000imp/kVarh	1000imp/kWh, 1000imp/kVarh
SO Output	Yes	Yes	Yes
Operation temp.	-20~+70°C	-20~+70°C	-20~+70°C
Average humidity	85%	85%	85%
Relative humidity	90%	90%	90%
Measurement Mode	Total=Forward Total=Forward+Reverse (default) Total=Forward-Reverse	Total=Forward Total=Forward+Reverse (default) Total=Forward-Reverse	Total=Forward Total=Forward+Reverse (default) Total=Forward-Reverse
Ref. frequency	50Hz	50Hz	50Hz
Accuracy class	Class B	Class B	Class B
Starting current	0.004Ib	0.004Ib	0.004Ib
Power consumption	≤ 1.5W, <10VA	≤ 1.5W, <10VA	≤ 1.5W, <10VA
Battery & Tariff	W/O Battery & Tariff	W/O Battery & Tariff	With Battery & Tariff
Communication	IR	IR&RS485 MODBUS	IR&RS485 MODBUS
Display	LCD6+2	LCD6+2	LCD6+2
Standard	EN62056 IEC1107 EN50470-1/3	EN62056 IEC1107 EN50470-1/3	EN62056 IEC1107 EN50470-1/3



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80,000m² of Own Factory
Exported to 68+ Countries



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