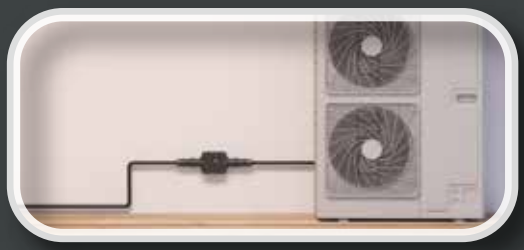
Wireless Energy Manage System

A smart load management and home automation solution based on LoRa communication

Smart Plug



Smart Switch

Smart EV Charger

Wireless CT

- low latency
- Supports all Deye hybrid inverters
- Easily define non-essential and critical loads
- Offline operation
- Maximize the use of solar power
- Minimize the electricity bill as much as possible
- LoRa communication
- Smart Load management
- Charging control strategy based on time and SOC

Deye

Wireless Energy Manage System

A smart load management and home automation solution based on LoRa communication.

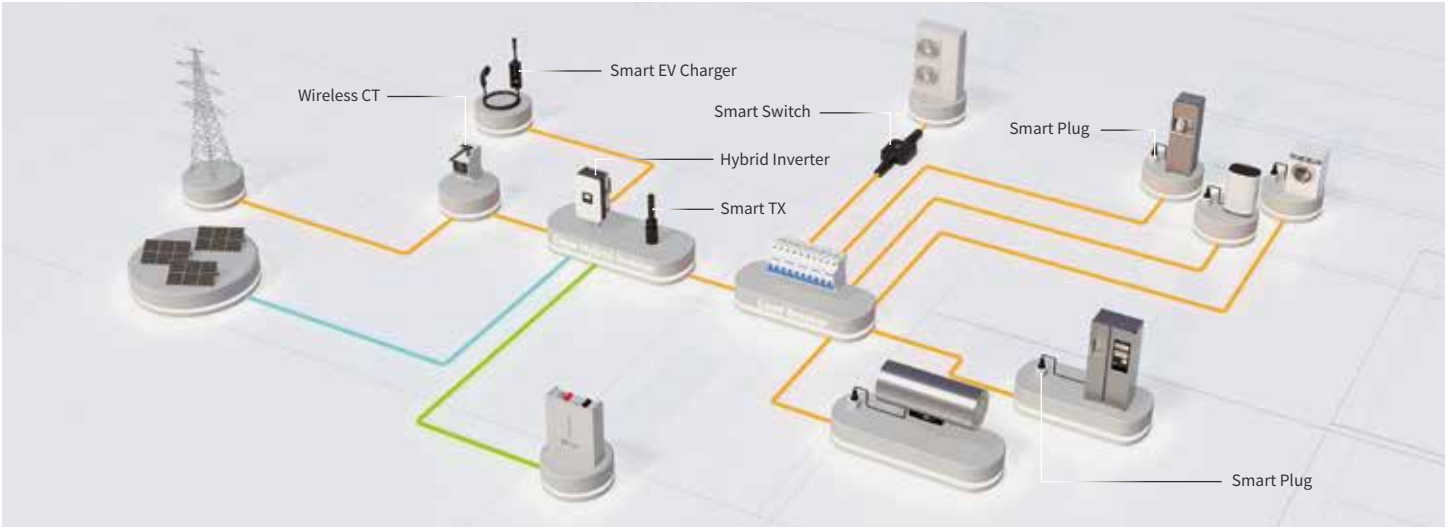
All Deye hybrid inverters can serve as the local control center for the Deye Smart Home IoT System. Simply install the Deye Smart Transmitter(TX) to the inverter's Meter port to easily pair with Deye LoRa devices.

Deye Wireless CT is installed in the distribution box to monitor power consumption, Supports both LoRa and RS485 communication methods simultaneously.

Deye Smart Plug can be easily installed in any standard socket, instantly upgrading the appliance plugged in to a smart device.

Deye Smart Switch is designed for outdoor high-power loads, offering the same logic control as Smart Plugs, supporting both single-phase and three-phase loads. With the Deye Cloud APP or directly on the inverter's screen, you can customize the on/off logic for each Smart Plug based on factors like time and battery SOC levels.

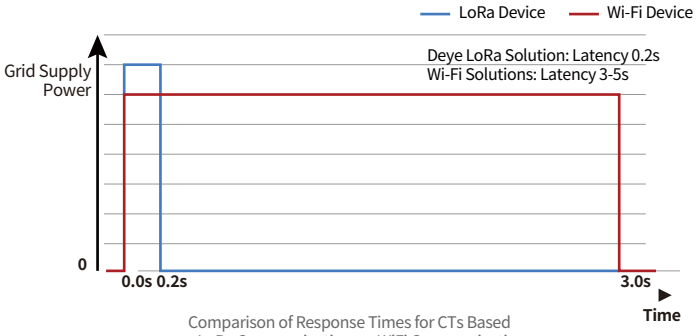
Deye Smart EV Charger can be directly connected to any AC port of the inverter and is controlled by the inverter via LoRa communication. It offers flexible options to take advantage of low-cost electricity, with modes such as Plug and Play, Time of Charge, or Solar Energy Only.



Why choose LoRa communication solutions?

LoRa devices have shorter wake-up times and lower communication latency, ensuring instant response.
In comparison, Wi-Fi devices typically take longer to wake up and may experience longer communication latency due to routing data and commands through the cloud platform.
Excessive latency makes it difficult for household energy systems to maintain stable operation.
If the Internet is not available, the Wi-Fi device may not be able to communicate with the server. But Deye's IoT devices communicate via LoRa protocol, so these devices can continue to conduct local commands.

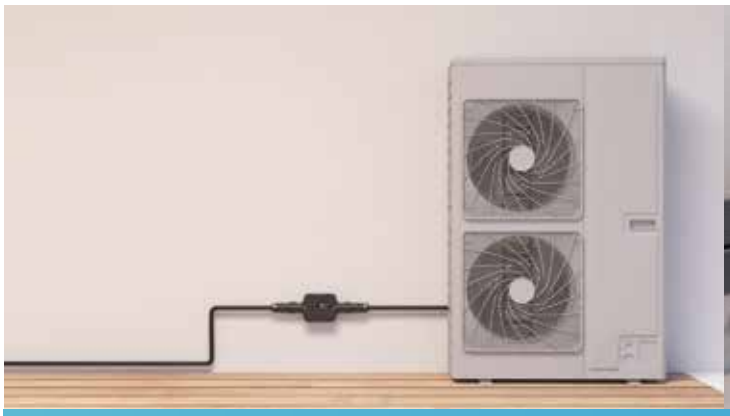
Zero-Export Function Response Time Diagram



Comparison of Response Times for CTs Based on LoRa Communication vs. WiFi Communication

Model	SUN-SMART-CT01
Electrical parameters	
Connection Type	L1/N(Single phase)，L1/L2/L3/N(Three phase)
CT	Secondary current: 50mA
Operation Voltage	85~300Va.c.(L-N)
Rated Frequency/Range	50Hz(45Hz-55Hz)/60Hz(55Hz-65Hz)
Self Consumption Power	≤2W
AC voltage withstand	4KV/1min
Accuracy	
Voltage	±0.1V
Current	±0.01A
Frequency	±0.01Hz
Power	±1W
Communication and Display	
Communication Interface	Lora/RS485
Lora Communication Distance	≈200m(Barrier free)
Display	LCD
Display Data	Voltage、Current、Active power、Reactive power、Frequency、Power Factor、Energy
General Data	
Operation Temperature	-40 to +60°C
Operation Humidity	0-75%
Ingress Protection(IP) Rating	IP20
Altitude	≤4000
Mounting	DIN-Rail Mounting
Size	53x96x64mm
Weight	0.15kg
Warranty	5 Years
Certification standards	IEC/EN 61010-1

Model	SUN-SMART-TX01
Electrical Parameters	
Input Voltage	DC 5V
Communication	
Communication Model	LoRa
Communication Distance	≈200m(Barrier free)
Basic Parameters	
Operating Temperature Range	-40 to +60°C
Permissible Ambient Humidity	0-100%
Ingress Protection(IP) Rating	IP20(After installation IP65)
Allowable Altitude	≤4000
Product size (WxHxD)	137.8x31.3x31.3mm
Weight	45.8g
Warranty	2 Years
Standard	IEC/EN 62368-1
LoRa Parameters	
Frequency Range	863MHz-870MHz
Antenna	Built-in
Antenna Gain	0.56dBi



Model	SUN-SMART-SWITCH01P3
Electrical Parameters	
Voltage Range	94-238Va.c.(Phase voltage)
Connection Type	L1/N(single phase), L1/L2/L3/N(three phase)
Maximum Current	25Aa.c.(Phase current)
Frequency and Range	50Hz(45Hz-55Hz)/ 60Hz(55Hz-65Hz)
Connection	Connector plug-in type
Communication	
Communication Model	LoRa
Lora Communication Distance	≈200m(Barrier free)
Basic Parameters	
Working Temperature Range	-40 to +45°C
Allow Environmental Humidity	0-100% RH
Ingress Protection(IP) Rating	IP65
Protection level	CLASS I
Allowable altitude	≤4000m
Product size (WxHxD)	96.7x204.7x37.7mm
Weight	0.4kg
Warranty	5 Years
Standard	IEC/EN 61010-1
Lora Parameters	
Frequency Range	863MHz-870MHz
Antenna	Internal antenna
Antenna Gain	1.58dBi@868MHz

Model	SUN-SMART-PLUG01P1-F
Electrical Parameters	
Rated voltage	220-250Va.c.
Maximum current	16Aa.c.
Frequency and Range	50Hz(45Hz-55Hz)/60Hz(55Hz-65Hz)
Connection	Plug-type
Communication	
Communication Model	LoRa
Lora Communication Distance	≈200m(Barrier free)
Basic Parameters	
Working Temperature Range	-40 to +60°C
Ingress Protection(IP) Rating	IP20
Protection level	CLASS I
Allowable altitude	≤3000m
Product size (WxHxD)	51.2x51.2x64mm
Weight	0.08kg
Warranty	5 Years
Standard	VDE 0620-2-1;EN 61058
LoRa	
Frequency Range	863MHz-870MHz
Antenna	Internal antenna
Antenna Gain	0.3.23dBi@868MHz

Model	SUN-EVSE11K01-EU-AC	SUN-EVSE22K01-EU-AC
Product Parameter		
Input Voltage/Range (V)	230/400	230(single phase), 230/400(three phase)
Connection Mode	3L+N+PE	L+N+PE,3L+N+PE
Input Current (A)	16	32
Input Frequency/Range	50/45-55, 60/55-65	
Maximum Output Power (kW)	11	7(single phase)/ 22(three phase)
Starting Method	Plug And Charge /Charge After Scanning/Schedule Charging	
Equipment Protection		
Over Temperature Protection	Yes	
Low Temperature Protection	Yes	
Over Voltage Protection	Yes	
Under Voltage Protection	Yes	
Short Circuit Protection	Yes	
Over Load Protection	Yes	
Earth Fault Protection	Yes	
Leakage Current Protection	DC 6mA	
Surge Protection Level	TYPE II	
General Data		
Operating Temperature Range (°C)	-40 to +60	
Permissible Ambient Humidity	5%~95% No condensation	
Permissible Altitude (m)	<3000	
Noise (dB)	≤25	
Ingress Protection(IP) Rating	IP 67	
Cabinet Size (WxHxD mm)	104x264x57.5	
Weight (kg)	3.75	
Gun Cable Length (m)	5	
Number Of Charging Guns	1	
MTBF	100,000h	
Safety EMC/Standard	EN/IEC 61851-1-2019, EN/IEC 61851-23:2014	
Interface		
Communication Mode	LoRa/Wi-Fi	

Ningbo Deye Inverter Technology Co., Ltd.
Address: No. 26 South YongJiang Road, Daqi, Beilun, NingBo, Zhejiang, China.

Deye Inverter