

Goodwe

Základní informace o střídačích Goodwe



Portfolio střídačů

GOODWE PRODUCT PORTFOLIO

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String inverters

Residential
0,7 – 15 kW

C&I
17 – 136 kW

Utility Scale
250 kW

Storage inverters

Hybrid
3 – 50 kW

AC coupled
3 – 50 kW

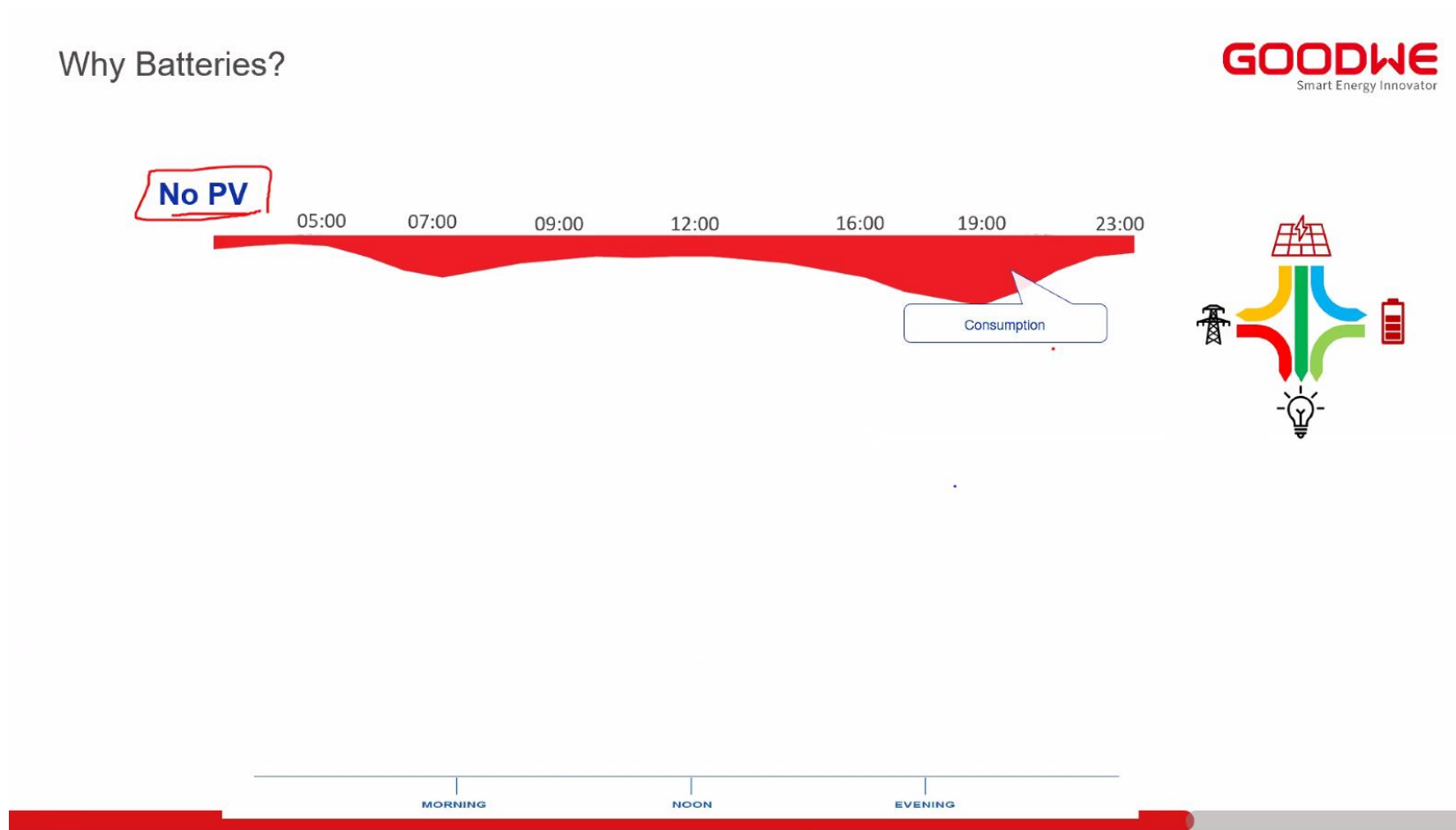
Battery storage

Battery
(LV & HV)

All-in-one
storage

Energy Management & Communications

Spotřeba domu



Spotřeba domu s FVE bez baterií

Why Batteries?

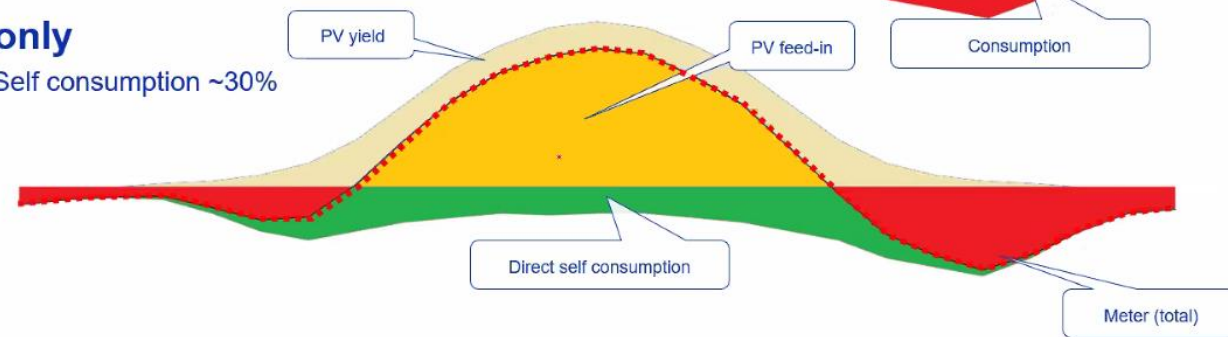
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No PV

05:00 07:00 09:00 12:00 16:00 19:00 23:00

PV only

Avg. Self consumption ~30%



MORNING

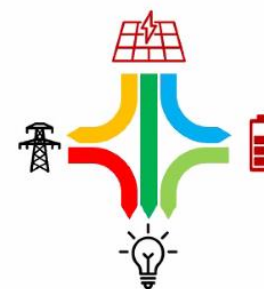
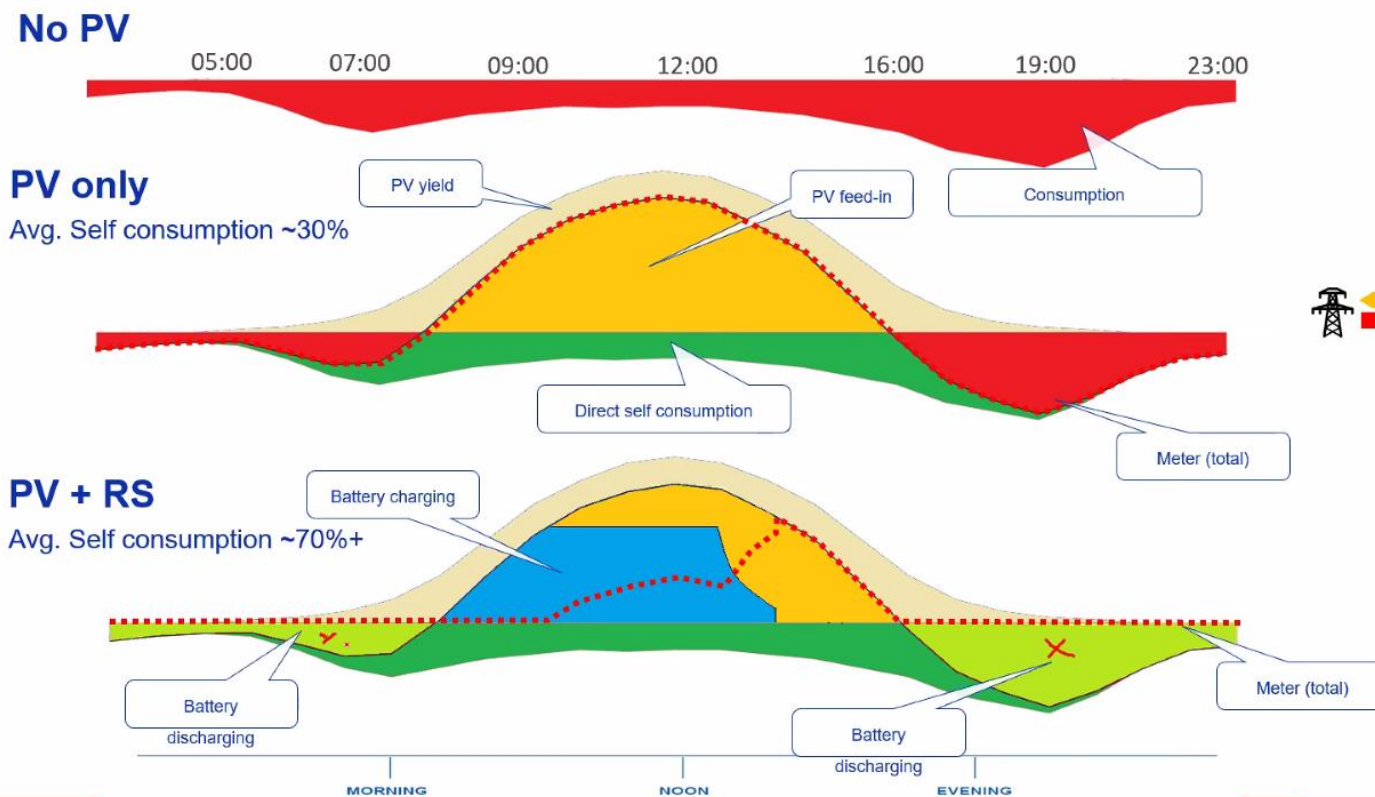
NOON

EVENING

Spotřeba domu FVE s baterií

Why Batteries?

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Síťový střídač

SDT G2 Series on-grid inverters – key features

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No removable panels during commissioning

All connections are made underneath the PV inverter using waterproof terminal adaptors.



Dual MPPTs

Multiple inputs per MPPTs for larger inverters

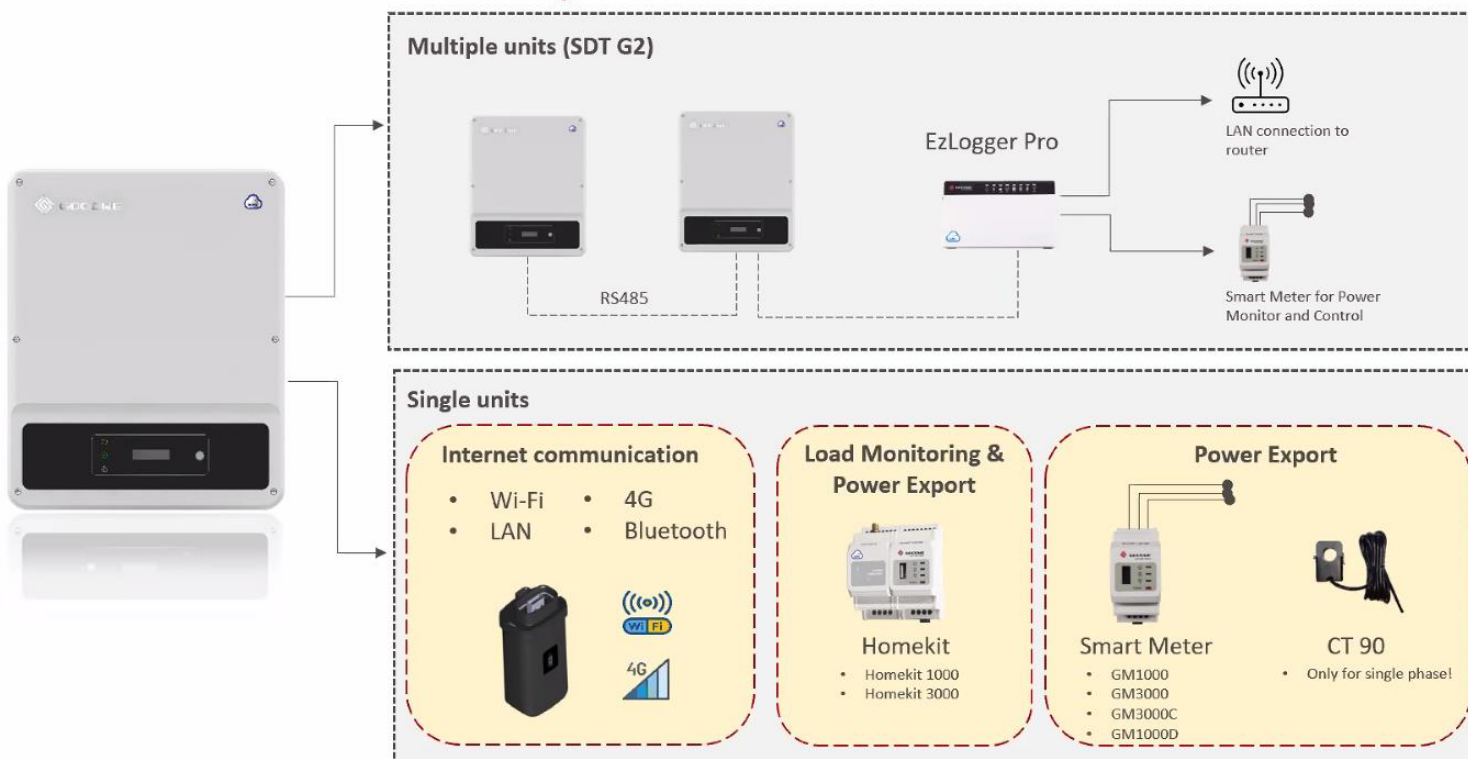


With or Without LCD Screen

SolarGo App used to configure and view inverter parameters.

Komunikace střídače Goodwe

Communication devices for Residential



Základní vlastnosti

Residential Overview

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High Efficiency – More power and less heat

Flexible Designing – Multiple MPPT

Export Control – Simply with optional CT/Smart Meter

Easy Installation – Light weight & compact design

Reliable – High temp. range and IP65 protection





Quiet operation – Fanless design

SEMS – Free monitoring platform

Typy síťových produktů

C&I Series



| | | SDT G2 Series | SMT Series NEW | MT Series Phase out | HT Series |
|------------|------------------------|--|---|---|---|
| | |  |  |  |  |
| Design | Nominal AC output | 17 – 25 kW | 25 – 60 kW | 80 kW | 100 – 120 kW |
| | Grid Connection | 3 phase * | 3 phase | 3 phase | 3 phase |
| | AC output Voltage | 400 V | 400 V | 400 V – 540 V | 400 V – 500 V |
| | MPPTs | 2 | 3 | 4 | 10 - 12 |
| | Input current | 12.5 A | 12.5 A | 11 - 13.3 A | 15 A |
| | Max efficiency* | 98.4 % | 98.8 % | 99.0 % | 99.0 % |
| | Max DC Voltage | 1100 V | 1100 V | 1100 V | 1100 V |
| Com. | Standard communication | RS485/ Wi-Fi | RS485/ Wi-Fi | RS485 | RS485 |
| | Optional communication | LAN | LAN / PLC | Wi-Fi / PLC | Wi-Fi / PLC |
| Protection | Protection degree | IP65 | IP65 | IP65 | IP66 |
| | SPD Types AC/DC | III/III (II opt. DC) | III/III (II opt. DC&AC) | II/II | II/II |
| | PID recovery function | - | Optional | Optional | Optional |
| | AFCI | Optional | Optional | Optional | Optional |

* Highest efficiency in the series

Typy síťových produktů

Utility Series



| HT Series | |
|---|---|
| GW250K-HT | GW250KN-HT |
|  |  |

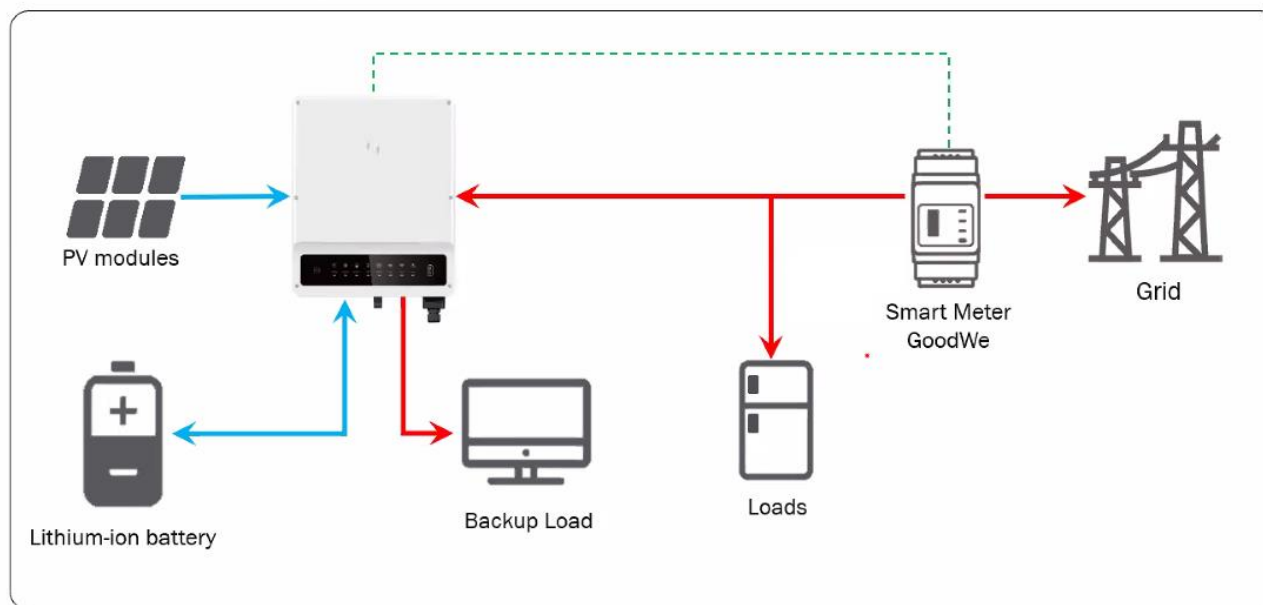
| Design | Nominal AC output | → 250 kW | 250 kW |
|------------|-----------------------------|-------------------------|-------------------------|
| | AC output Voltage | → 800 V | 800 V |
| | MPPTs | 12 | 6 |
| | Number of DC inputs | 24 | 18 |
| | DC Input current per MPPT | 30 A | 60 A |
| | Max efficiency | 99.0 % | 99.0 % |
| | IP protection rating | IP66 | IP66 |
| | Max DC Voltage | 1500 V | 1500 V |
| | Communication | RS485 & PLC & Bluetooth | RS485 & PLC & Bluetooth |
| Protection | DC Switch | Integrated | Integrated |
| | SPD Types AC/DC | II/II | II/II |
| | PID recovery function | Optional | Optional |
| | Reactive power compensation | Optional | Optional |

Připojení hybridního střídače

Hybrid inverter concept

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“Grid connection with storage”



Grid-tied inverter

Storage capacity
(Li-ion battery)

Backup AC line grid-independent

No priority between loads

UPS Switching time ≤ 10 ms

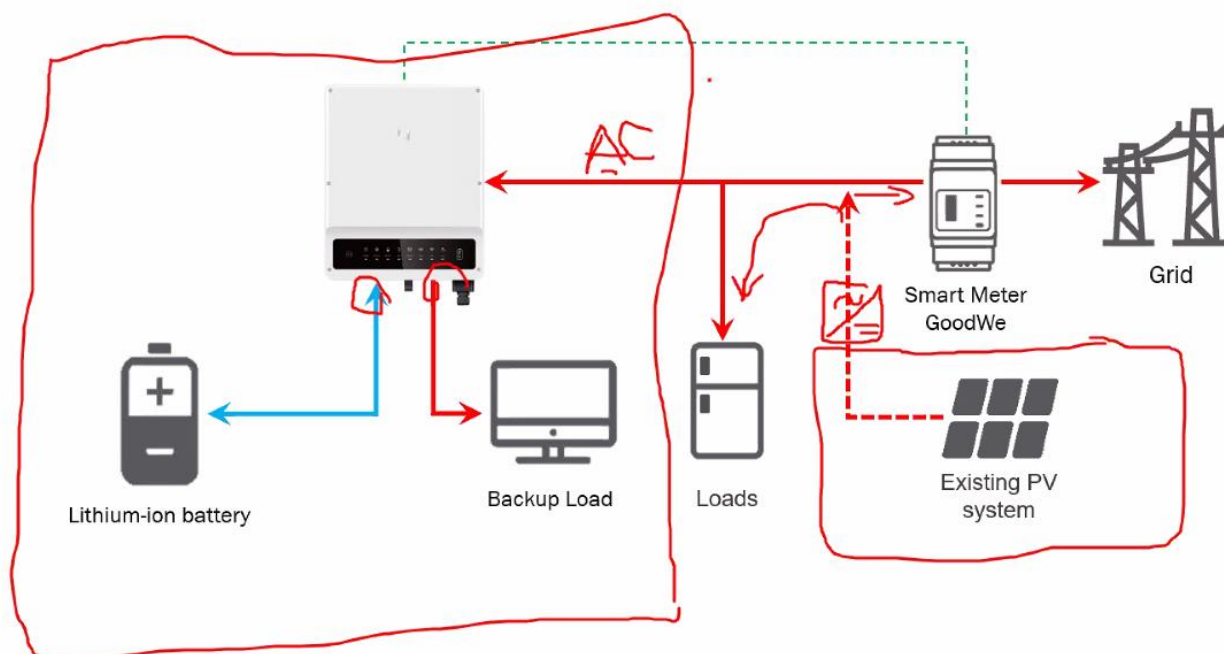
Possibility to limit export to the grid

Připojení hybridního střídače AC coupling

Retrofit / AC Coupled inverter concept

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“Energy optimization with battery”



Grid-tied inverter

Storage capacity
(Li-ion battery)

Backup AC line grid-independent

No priority between loads

UPS Switching time ≤ 10 ms

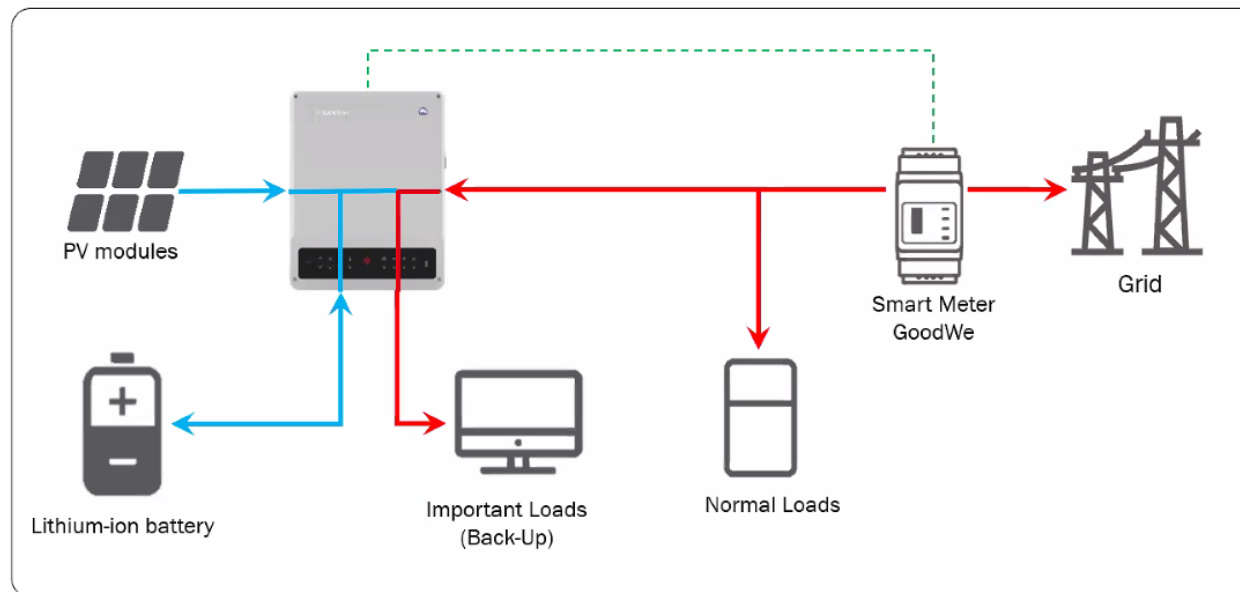
Possibility to limit export to the
grid

Koncept hybridního střídače

Hybrid Inverter Concept

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“On-grid inverter with battery”



Grid-connected inverter

Possibility to connect battery

Independent back-up loads

No priority of the loads

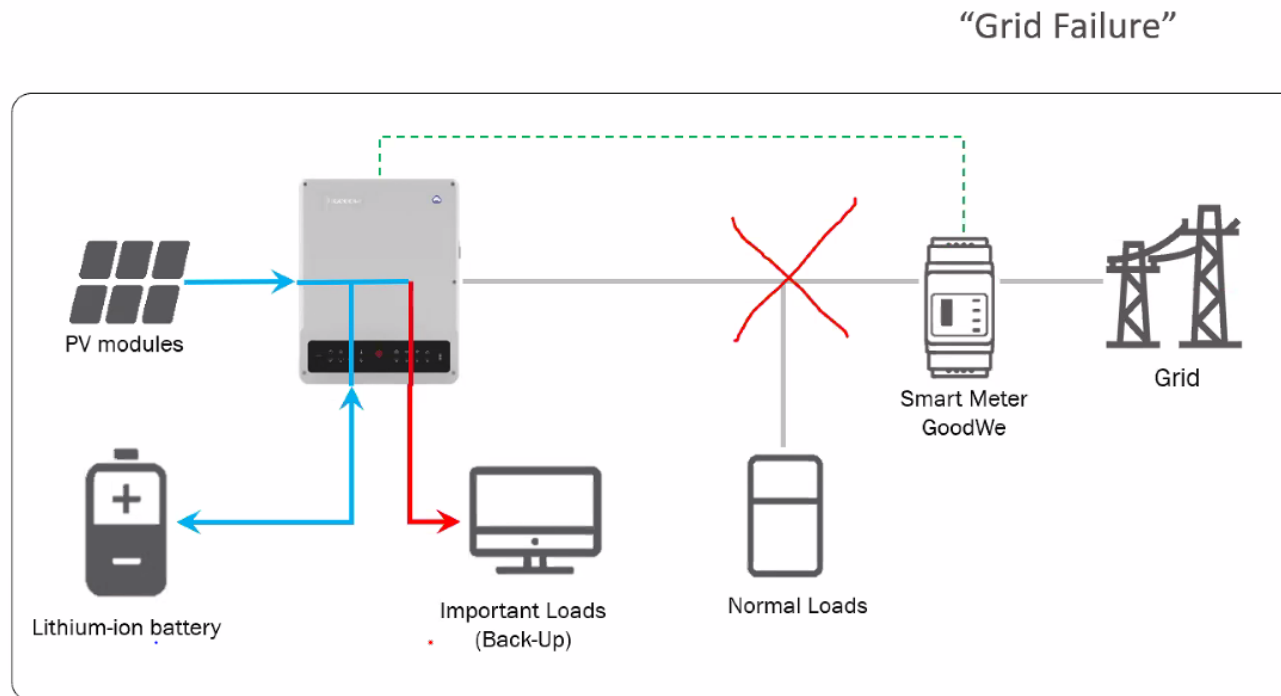
Back-up switch time ≤ 10 ms
(same as the UPS)

Possible to limit power
exported to the grid

Koncept hybridního střídače

Hybrid Inverter Concept

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Grid-connected inverter

Possibility to connect battery

Independent back-up loads

No priority of the loads

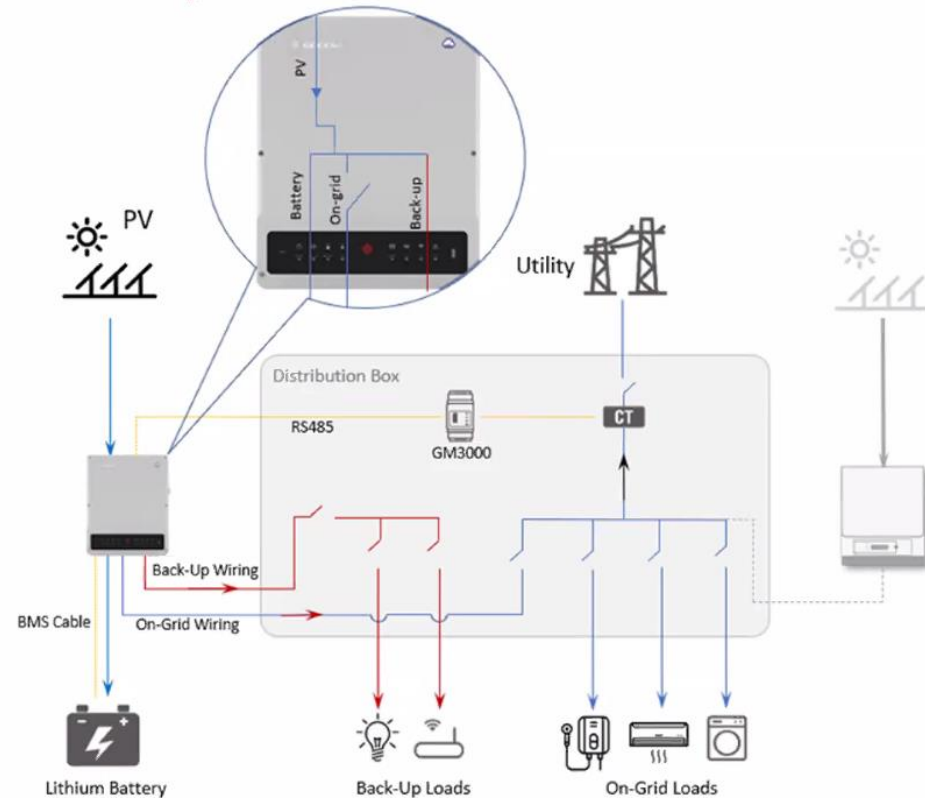
Back-up switch time ≤ 10 ms
(same as the UPS)

Possible to limit power
exported to the grid

Back-up vlastnosti

Integrated Back-up function

- UPS Level switch time <math>< 10\text{ ms}</math>
- Integrated, no external equipment required
- PV supply also during backup
- 100% unbalanced output (ET series)
- High backup load capability (up to nominal AC power except EM series)








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Portfolio hybridních střídačů

Hybrid Series (Residential)



| | EM Series | ES Series | ESA Series | EH PLUS+ Series | ET Series |
|------------------------------------|--|---|---|---|---|
| |  |  |  |  |  |
| Nominal AC output | 3.6 – 5 kW | 3 – 5 kW | 5 kW + 9.6 kWh | 3.6 – 6 kW | 5 – 10 kW |
| Grid Connection | 1 phase | 1 phase | 1 phase | 1 phase | 3 phase |
| Lithium Battery | Low Voltage | Low Voltage | Low Voltage | High Voltage | High Voltage |
| MPPTS | 1 - 2 | 2 | 2 | 2 | 2 |
| Max. Discharge / Charge Power | 2.3 kW | 5 kW | 5 kW | 6 kW | 10 kW |
| Max. Backup load | 2.3 kW | 4.6 kW | 4.6 kW | 6 kW | 10 kW |
| Parallel connection | - | - | - | - | With SEC1000S |
| Compatible with high power modules | - | - | - | Yes | Yes |
| Cooling technology | Natural Convection | Natural Convection | Natural Convection | Natural Convection | Natural Convection |
| Battery ready grid version | - | - | - | With activation code | With activation code |
| IP Rating | 65 | 65 | 54 | 66 | 66 |
| Standard Features | <ul style="list-style-type: none"> • < 10ms backup transfer time • LED Display • Smart Meter for Power Control | | | | |
| | <ul style="list-style-type: none"> • Wi-Fi Comms • App based commissioning via PV Master | | | | |

Portfolio hybridních střídačů

Hybrid and Retrofit Series (C&I)

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| | ET 15-30 | ETC | BTC (retrofit) |
|------------------------------------|---|---|---|
| |  |  |  |
| Nominal AC output | 15 – 30 kW | 50 kW | 50 kW |
| Grid Connection | 3 phase | 3 phase | 3 phase |
| Lithium Battery | High Voltage | High Voltage | High Voltage |
| MPPTS | 2 - 3 | 1 (8 string/MPPT) | |
| Max. Discharge / Charge Power | 15/20/2x12.5/2x 15 | 50 kW | 50 kW |
| Max. Backup load | Pn | 50 kW | 50 kW |
| Parallel connection | - | - | - |
| Compatible with high power modules | Yes | Yes | Yes |
| Cooling technology | Smart Fan Cooling | Smart Fan Cooling | Smart Fan Cooling |
| IP Rating | IP65 | IP20 | IP20 |

Standard Features

- Wi-Fi Comms
- CAN Battery Comms
- App based commissioning via PV Master
- < 10ms backup transfer time
- LED Display
- Smart Meter for Power Control

Vlastnosti hybridních střídačů

Reliable, quiet and efficient

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-25...+60°C

Ambient
Temperature range

45 °C

Full Load Operation

IP65

Humidity and dust
proof

4000m

Operating altitude



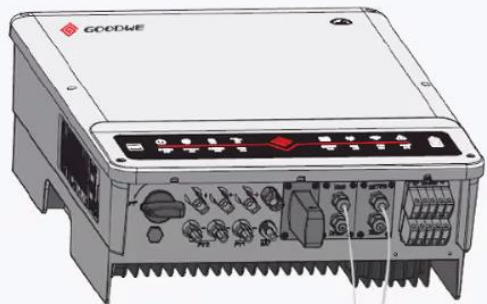
Fanless Cooling

Instalace Goodwe

Easy installation

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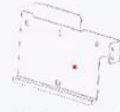
One Stop: Provide all Components with Pre-wired Cables



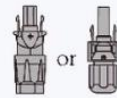
Pre-wired communication cables help achieve quick installation

To Smart Meter

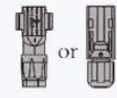
To Battery



Wall-mounted Bracket X1



Positive PV Plug X 2or3



Negative PV Plug X 2or3



Positive BAT Plug X1



Negative BAT Plug X1



PE Terminal X1



Expansion Bolts X1



AC Cover X1



Pin Terminal X12



User Manual X1



Quick Installation Guide X1

Smart Meter & CT



Wi-Fi Module



Bluetooth Module for ET & ES



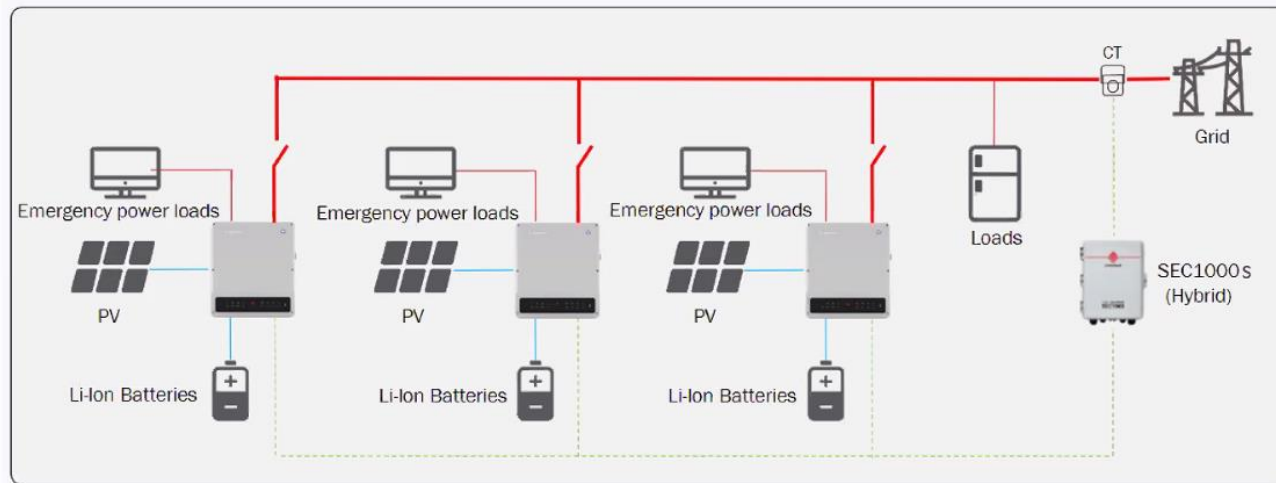
Communication Splitters * 5 (For ET paralleling cases)



Paralelní zapojení

ET/BT Series – Parallel Option with SEC1000S

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Max 100 kW AC • Unbalanced Output • Smart Control


Nastavení kapacity baterie

Battery Capacity Reservation


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Set different DOD levels for backup- and normal operation



| | |
|---|------|
| Battery Modules | 0 |
| Max. Charging Voltage | 60.0 |
| Max. Charging Current | 45.0 |
| Max. Discharging Current | 50.0 |
| SOC Protection <input checked="" type="checkbox"/> | |
| <small>When SOC Protection is turned on, battery stops discharging according to the Depth of Discharge (DOD) set below.</small> | |
| Depth of Discharge (on-grid) | 70 |
| Depth of Discharge (off-grid) | 90 |
| Force Charge to Battery <input type="checkbox"/> | |



Kompatibilní baterie

Compatible Batteries



Always check the **GoodWe website** for the latest batteries compatible with our inverters.

[Download GoodWe Brochures and Manuals](#)

APPROVED BATTERY OPTIONS STATEMENT

This statement covers all GoodWe energy storage products. Please find details below. Only batteries listed below are approved for connection to GoodWe storage inverters.

| Battery Brand | Battery Series | Battery Model | Inverter Series | | | | | | | | | | | | | | | | |
|---------------|----------------|---------------|-----------------|----|----|-----|----|----|----|----|---|--|--|--|--|--|---|---|--|
| | | | ES | EM | BP | SBP | ET | BT | EH | BH | | | | | | | | | |
| GoodWe | Lyrix Home S | SECU-A5-4L | • | • | • | • | | | | | | | | | | | | | |
| | | LX S7.5-H | | | | | | | • | • | • | | | | | | | | |
| | | LX S16-H | | | | | | | • | • | • | | | | | | | | |
| | | LX S13-H | | | | | | | • | • | • | | | | | | | | |
| | | LX S15-H | | | | | | | • | • | • | | | | | | | | |
| | | LX S18-H | | | | | | | • | • | • | | | | | | | | |
| | Lyrix Home U | LX S20-H | | | | | | | • | • | • | | | | | | | | |
| | | LX US4-L1 | • | • | • | • | | | | | | | | | | | | | |
| | | LX US4-L2 | • | • | • | • | | | | | | | | | | | | | |
| | | LX US4-L3 | • | • | • | • | | | | | | | | | | | | | |
| LX US4-L4 | | • | • | • | • | | | | | | | | | | | | | | |
| LX US4-L5 | | • | • | • | • | | | | | | | | | | | | | | |
| SECU-S | LX US4-L6 | • | • | • | • | | | | | | | | | | | | | | |
| | SECU-S10 | | | | | | | | | | | | | | | | • | • | |
| | SECU-S15 | | | | | | | | | | | | | | | | • | • | |
| | SECU-S18 | | | | | | | | | | | | | | | | • | • | |
| | | SECU-S20 | | | | | | | | | | | | | | | • | • | |

Note:
 1. ARM firmware versions 11 and above are compatible with SECU-A/Lyrix Home U Series battery.
 2. ARM firmware versions 14 and above are compatible with Lyrix Home S Series battery.

| Battery Brand | Battery Series | Battery Model | Inverter Series | | | | | | | | | | | | | | | | |
|---------------|----------------|-------------------|-----------------|----|----|-----|----|----|----|----|--|--|--|--|--|--|--|--|--|
| | | | ES | EM | BP | SBP | ET | BT | EH | BH | | | | | | | | | |
| ALPHA·ESS** | SmileC-BAT** | Smile-BAT-10.1P** | • | • | • | • | | | | | | | | | | | | | |
| | | Smile-BAT-10.3P** | • | • | • | • | | | | | | | | | | | | | |
| | | Smile-BAT-10.3P** | • | • | • | • | | | | | | | | | | | | | |
| | | Smile-BAT-13.5P** | • | • | • | • | | | | | | | | | | | | | |
| | | MAB112-1P** | • | • | • | • | | | | | | | | | | | | | |
| | | MAB112-3P** | • | • | • | • | | | | | | | | | | | | | |

Wallbox

Product features and benefits

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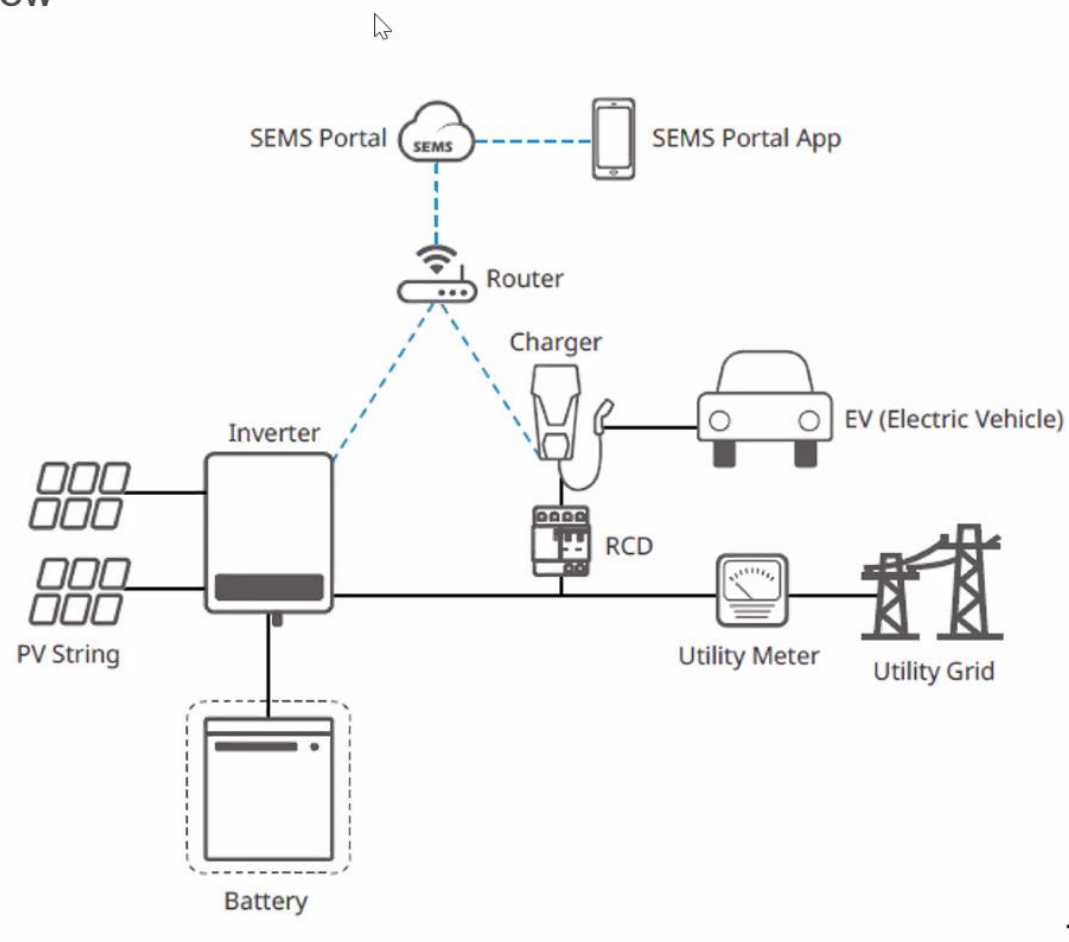
- **Key technical data:**
 - 3 versions (7kW single phase; 11 / 22 kW triple phase)
 - 6m cable included
 - 6mA residual Current protection integrated
- **Supports smart charging:**
 - **Solar Charging:** Charges EV only from PV - requires GoodWe PV inverter with GM3000 or Hybrid/Battery inverter
 - **Hybrid Charging:** Charges EV from PV and battery - requires GoodWe Hybrid/Battery inverter
- **Communication:**
 - Compatible with all GoodWe inverters
 - Communication to inverters via SEMS monitoring
 - Wifi connection to Router
 - Wifi or Bluetooth for direct control via SolarGo App
- **Optional Accessories:**
 - External RCD Type A with IP65 housing
 - Ground mounting pole for single phase Charger (7kW)
 - Ground mounting pole for triple phase charger (11 / 22 kW)



Celkový pohled na instalaci

System overview

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Hlavní parametry GW10K-ET

| Technické údaje | GW5K-ET | GW8K-ET | GW10K-ET | |
|--|---|----------------------|--|----------------------|
| Specifikace baterie | Typ baterie | Li-Ion | Li-Ion | Li-Ion |
| | Rozsah napětí baterie (V) | 180~550 | 180~550 | 180~550 |
| | Max. nabíjecí proud (A) | 25 | 25 | 25 |
| | Max. vybíjecí proud (A) | 25 | 25 | 25 |
| | Nabíjecí systém pro Li-Ion baterie | Auto-adaptační s BMS | Auto-adaptační s BMS | Auto-adaptační s BMS |
| Vstupní parametry z FV | Max. DC vstupní výkon (W) | 6500 | 9600 | 13000 |
| | Max. DC vstupní napětí (V) | 1000 | 1000 | 1000 |
| | Rozsah MPPT (V) | 200~850 | 200~850 | 200~850 |
| | Náběhové napětí (V) | 180 | 180 | 180 |
| | Rozsah MPPT při plném zatížení (V) | 240~850 | 380~850 | 460~850 |
| | Jmenovité DC vstupní napětí (V) | 620 | 620 | 620 |
| | Max. vstupní proud (A) | 11/11 | 11/11 | 11/11 |
| | Max. zkratový proud (A) | 13.8/13.8 | 13.8/13.8 | 13.8/13.8 |
| | Počet MPP trackerů | 2 | 2 | 2 |
| | Počet stringů na MPP tracker | 1/1 | 1/1 | 1/1 |
| AC výstupní parametry (Při připojení k síti) | Jmenovitý výstupní výkon do rozvodné sítě (VA) | 5000 | 8000 | 10000 |
| | Max. zdánlivý výstupní výkon do rozvodné sítě (VA)* | 5000 | 8000 | 11000 * |
| | Max. zdánlivý příkon z rozvodné sítě (VA) | 10000 | 15000 | 15000 |
| | Jmenovité výstupní napětí (V) | 400/380, 3L/N/PE | 400/380, 3L/N/PE | 400/380, 3L/N/PE |
| | Jmenovitá výstupní frekvence (Hz) | 50/60 | 50/60 | 50/60 |
| | Max. proudový výstup AC do rozvodné sítě (A) | 8.5 | 13.5 | 16.5 |
| | Max. příkon AC proudu z rozvodné sítě Grid (A) | 15.2 | 22.7 | 22.7 |
| | Výstupní účinnost | | ~1 (Nastavitelné od 0.8 kapacitní do 0.8 induktivní) | |
| | Výstup THDi (@Jmenovitý výstup) | <3% | <3% | <3% |

Hlavní parametry GW10K-ET

| | | | | |
|-------------------------|--|--|----------------------|----------------------|
| Účinnost | Max. účinnost | 98.0% | 98.3% | 98.3% |
| | Max. účinnost zatížení baterie | 97.5% | 97.5% | 97.5% |
| | Euro účinnost | 97.0% | 97.0% | 97.0% |
| Ochrana | Anti-islanding ochrana | Integrovaná | Integrovaná | Integrovaná |
| | Ochrana proti FV přepólování | Integrovaná | Integrovaná | Integrovaná |
| | Detekce izolačního odporu | Integrovaná | Integrovaná | Integrovaná |
| | Jednotka pro monitorování únikového proudu | Integrovaná | Integrovaná | Integrovaná |
| | Ochrana proti výstupnímu přetížení | Integrovaná | Integrovaná | Integrovaná |
| | Ochrana proti výstupním zkratům | Integrovaná | Integrovaná | Integrovaná |
| | Ochrana bateriového vstupu | Integrovaná | Integrovaná | Integrovaná |
| | Ochrana proti výstupnímu přepětí | Integrovaná | Integrovaná | Integrovaná |
| Obecné informace | Rozsah provozních teplot (°C) | -35–60 | -35–60 | -35–60 |
| | Relativní vlhkost | 0–95% | 0–95% | 0–95% |
| | Provozní nadmořská výška (m) | ≤4000 | ≤4000 | ≤4000 |
| | Chlazení | Pasivní | Pasivní | Pasivní |
| | Hluk (dB) | <30 | <30 | <30 |
| | Uživatelské rozhraní | Obrazovka a aplikace | Obrazovka a aplikace | Obrazovka a aplikace |
| | Komunikace s BMS | RS485; CAN | RS485; CAN | RS485; CAN |
| | Komunikace s měřičem | RS485 | RS485 | RS485 |
| | Komunikace s EMS | RS485 (izolovaná) | RS485 (izolovaná) | RS485 (izolovaná) |
| | Komunikace s portálem | Wi-Fi | Wi-Fi | Wi-Fi |
| | Váha (kg) | 25 | 25 | 25 |
| | Velikost (Šířka*Výška*Hloubka v mm) | 415*516*160 | 415*516*160 | 415*516*160 |
| | Instalace | Držák na zeď | Držák na zeď | Držák na zeď |
| | Stupeň krytí | IP65 | IP65 | IP65 |
| | Pohotovostní vlastní spotřeba (W)*** | <15 | <15 | <15 |
| Topologie | Bez transformátoru | Bez transformátoru | Bez transformátoru | |
| Certifikáty a standardy | Regulace sítě | CEI 0-21; VDE4105-AR-N; VDE0126-1-1; EN50438; G83/2; G100 | | |
| | Bezpečnost | IEC62109-1&2, IEC62040-1 | | |
| | EMC | EN61000-6-1, EN61000-6-2, EN61000-6-3, EN61000-6-4, EN61000-4-16, EN61000-4-18, EN61000-4-29 | | |

Dyness baterie

SPECIFIKACE

| Model | Tower T7 | Tower T10 | Tower T14 | Tower T17 | Tower T21 |
|--|--|-------------------|-------------------|-------------------|-------------------|
| Využitelná energie | 7.10KWh | 10.66KWh | 14.20KWh | 17.76KWh | 21.31KWh |
| Kapacita | 37Ah | 37Ah | 37Ah | 37Ah | 37Ah |
| Jmenovité napětí | 192V | 288V | 384V | 480V | 576V |
| Maximální trvalý vybíjecí výkon ^[1] | 4.26KW | 6.39KW | 8.52KW | 10.65KW | 12.78KW |
| Maximální trvalý nabíjecí výkon ^[2] | 4.26KW | 6.39KW | 8.52KW | 10.65KW | 12.78KW |
| Čistá hmotnost | 105Kg | 146Kg | 187Kg | 228Kg | 269Kg |
| Rozměry[V-H-Š] | 700*504*380mm | 900*504*380mm | 1100*504*380mm | 1300*504*380mm | 1500*504*380mm |
| Úroveň ochrany | IP54 | IP54 | IP54 | IP54 | IP54 |
| Kalendář Life ^[1] | 6000 Cyklů | 6000 Cyklů | 6000 Cyklů | 6000 Cyklů | 6000 Cyklů |
| Teplotní rozsah nabíjení | 0-50°C | 0-50°C | 0-50°C | 0-50°C | 0-50°C |
| Rozsah vybíjecí teploty | -10-50°C | -10-50°C | -10-50°C | -10-50°C | -10-50°C |
| Interní bateriový modul | HV9637 | HV9637 | HV9637 | HV9637 | HV9637 |
| Připojení modulu | řada | řada | řada | řada | řada |
| Číslo modulu | 2 | 3 | 4 | 5 | 6 |
| Komunikace | CAN | CAN | CAN | CAN | CAN |
| Záruka | 10 let | 10 let | 10 let | 10 let | 10 let |
| Kompatibilní měnič | Goodwe, Luxpower, testuj se další značky | | | | |
| Certifikace | TUV/CE/IEC62619/IEC62040/UN38.3/CEC Akreditováno/U L1973 | | | | |



[1] Zkušební podmínky: Nabíjení/vybíjení 0,2C, @25°C, 80% Dod

[2] Maximální trvalý vybíjecí/nabíjecí výkon při komunikaci se střídačem je 0,6°C

Pylontech Force

Technické specifikace

| Základní parametry | FORCE H1 (336V74AH) | FORCE H2 (384V37AH) |
|--------------------------------------|-----------------------------------|----------------------------------|
| Bateriový modul | FH48074 | FH9637M |
| Napětí bateriového modulu (Vdc) | 48 | 96 |
| Kapacita bateriového modulu (Ah) | 74 | 37 |
| Počet bateriových modulů (volitelné) | 2~7 ks | 2~4 ks |
| Kapacita bateriového systému (kWh) | 24,86 | 14,21 |
| Napětí bateriového systému (V) | 336 | 384 |
| Rozměry (Š*H*V cm) | 600*380*1380 | 450*296*1415 |
| Hmotnost (kg) | 259 | 155 |
| Hloubka vybití | 90% | 90% |
| Nabíjecí/vybíjecí proud (A) | 14,8 (doporučeno) 37 (max.) | 7,4 (doporučeno) 37 (max.) |
| Komunikace | CAN,Modbus | CAN,Modbus |
| Třída ochrany | IP55 | IP55 |
| Pracovní teplota (°C) | 0-50 | 0-50 |
| Skladovací teplota (°C) | -20-60 | -20-60 |
| Předpokládaná životnost | 15 ⁺ let (25 °C/77°F) | 15 ⁺ let (25 °C/77°F) |
| Certifikace | UL/IEC62619/CE/UN38.3 | UL/IEC62619/CE/UN38.3 |

Kapacita jednoho modulu 3,55kWh



Lynx batterie

Details Lynx home F / Lynx home F PLUS+

GOODWE
Smart Energy Innovator



- Wide energy range 6.6 - 16.4 kWh
- Compatible with EH/BH, ET/BT as well as ET30
- Communication via inverter
- IP55 suitable for outdoor installation
- Charging 0 ~ 50°C, discharging -20 ~ 50°C
- LiFePO4 cells (10 years warranty)

| | LX F6.6-H | LX F9.8-H | LX F13-H | LX F16-H |
|---------------|----------------|----------------|-----------------|-----------------|
| Modul | 2 | 3 | 4 | 5 |
| Usable energy | 6,6 kWh | 9,8 kWh | 13,1 kWh | 16,4 kWh |
| Voltage | 182 ~ 230V | 274 ~ 346V | 365 ~ 461V | 456 ~ 576V |

SEMS Portál

SEMS Portal

GOODWE
Smart Energy Innovator



Overview of all installed plants

Easily find if an error has occurred

Check generation of specific plant and total generation

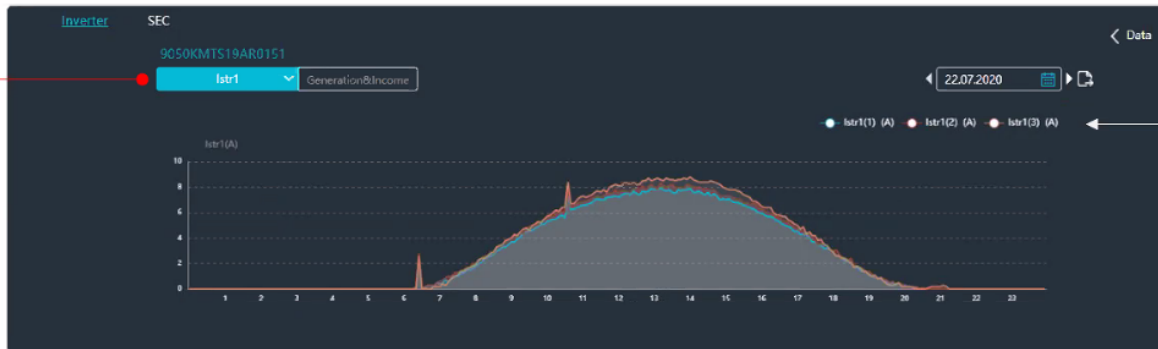
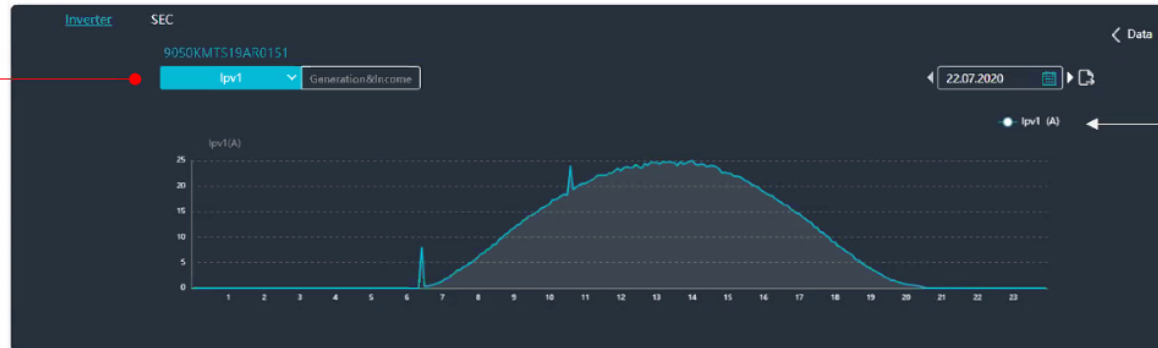
[SEMS Demo Version](#)

Grafy

Detailed Graphs



- Power
- Vpv1
- Vpv2
- Vpv3
- Vpv4
- Ipv1**
- Ipv2
- Ipv3
- Ipv4
- Vac1
- Vac2
- Vac3
- Iac1
- Iac2
- Iac3
- Fac1
- Fac2
- Fac3
- Work Mode
- Temperature
- Today Generation
- Total Generation
- HTotal
- Istr1**
- Istr2
- Istr3
- Istr4
- RSSI
- Pac



Instalace

What you need

GOODWE
Smart Energy Innovator



GoodWe installation manual



Tool set



SolarGo

Residential and C&I setting



SEMS

Monitoring



Personal Protective Equipment

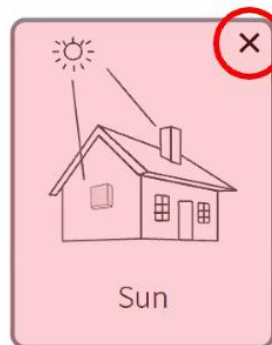
Zapojení střídače

Inverter Location

GOODWE
Smart Energy Innovator

Avoid locations with direct exposure to:

- Sunlight
- Rain
- Snow

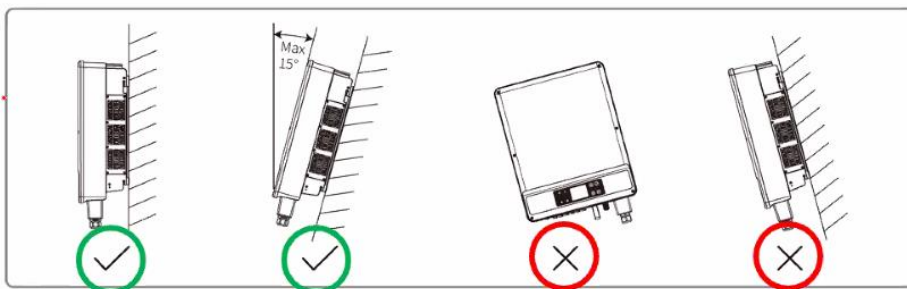


Zapojení střídače

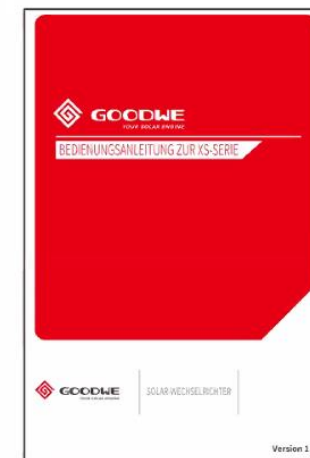
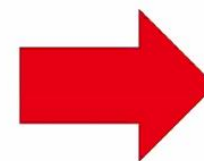
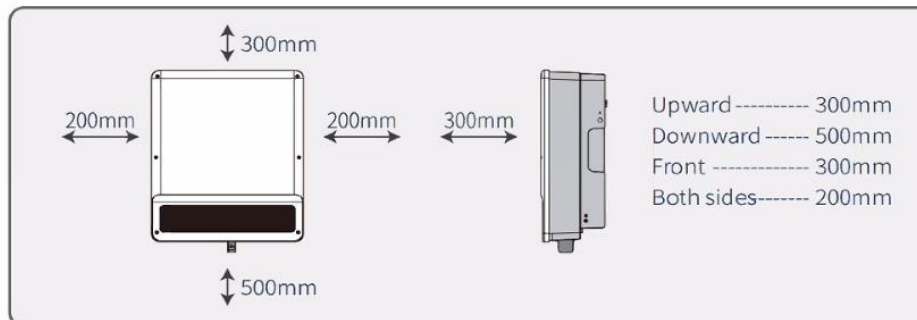
Inverter Mounting

GOODWE
Smart Energy Innovator

- Observe maximum tilt allowance – different for every inverter



- Observe minimum clearance distances – different for every inverter

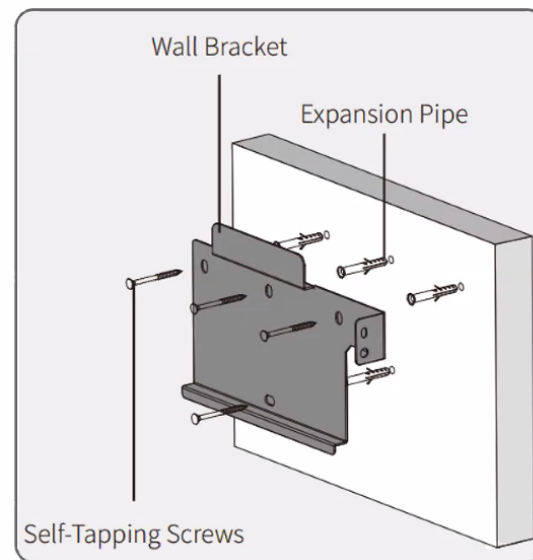
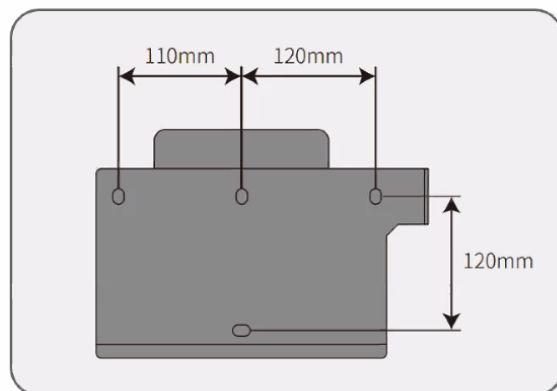


Zapojení střídače

Attaching the mounting plate

GOODWE
Smart Energy Innovator

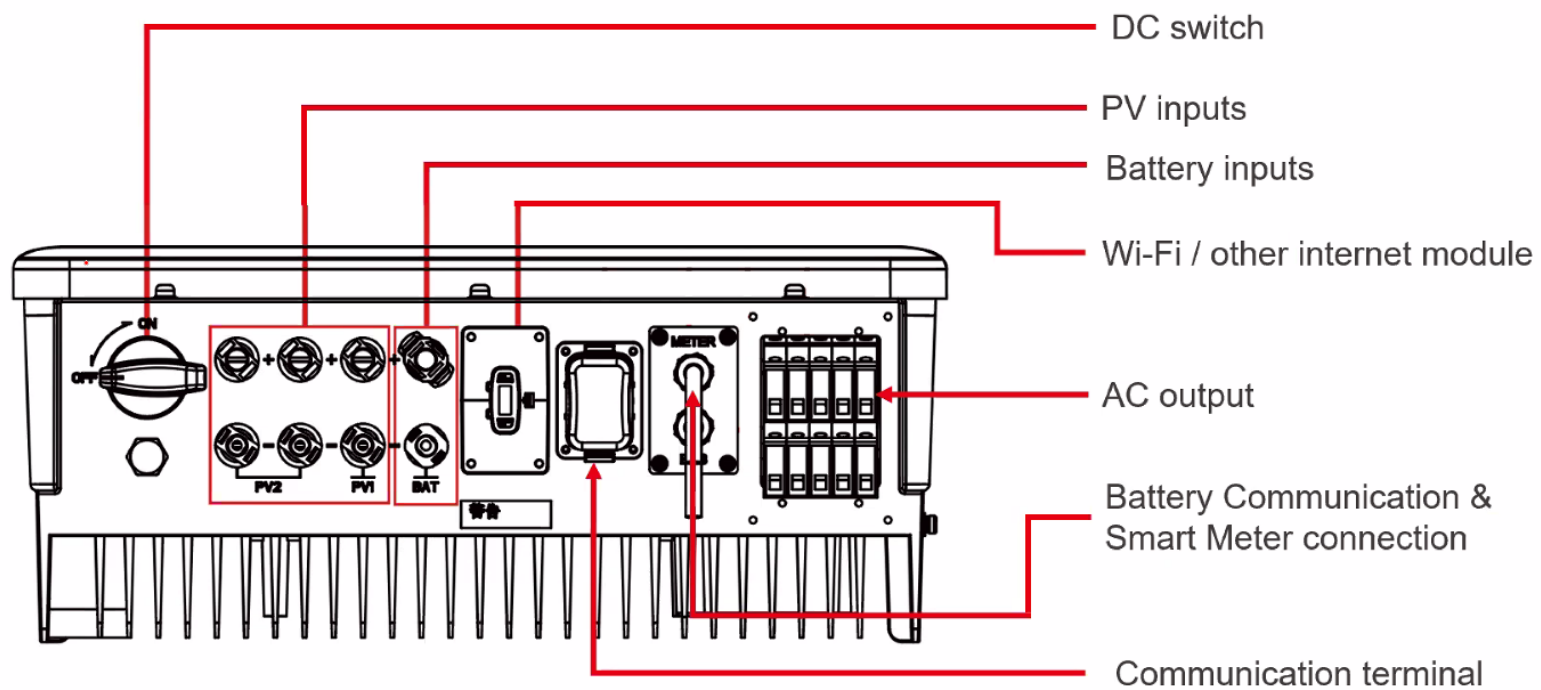
1. Observe mounting bracket holes
2. Drill required holes
3. Insert expansion plugs into holes
4. Fasten mounting plate with supplied screws



Zapojení střídače

ET: Inverter connections

GOODWE
Smart Energy Innovator

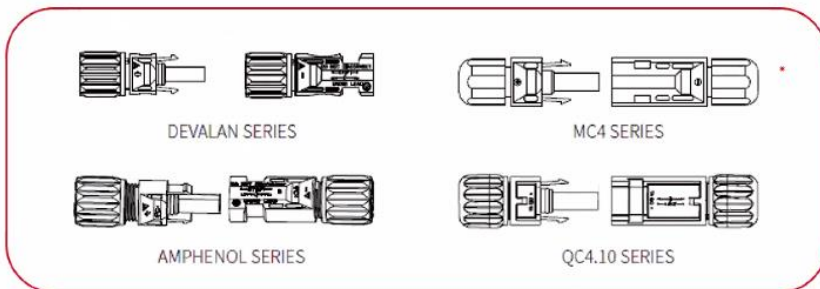


Zapojení panelů

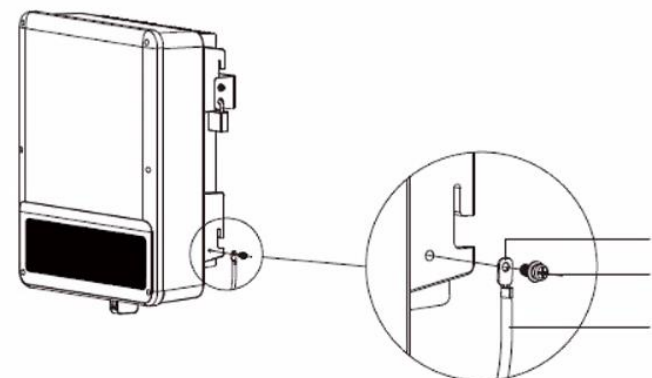
ET: Before connecting the DC-side

GOODWE
Smart Energy Innovator

1. Make sure that the DC switch is turned off
2. Observe the cable size according to the manual
3. **Connect the PE cable according to the instructions**



There are MC4, QC4.10, or Amphenol plugs in the accessory box.



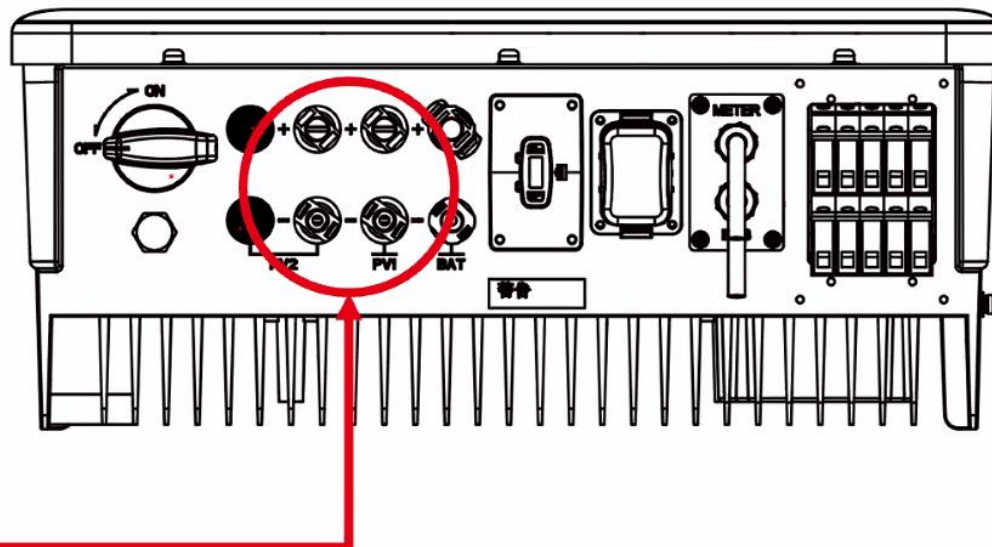
Zapojení panelů

ET: DC Side

GOODWE
Smart Energy Innovator

Connect the DC cables

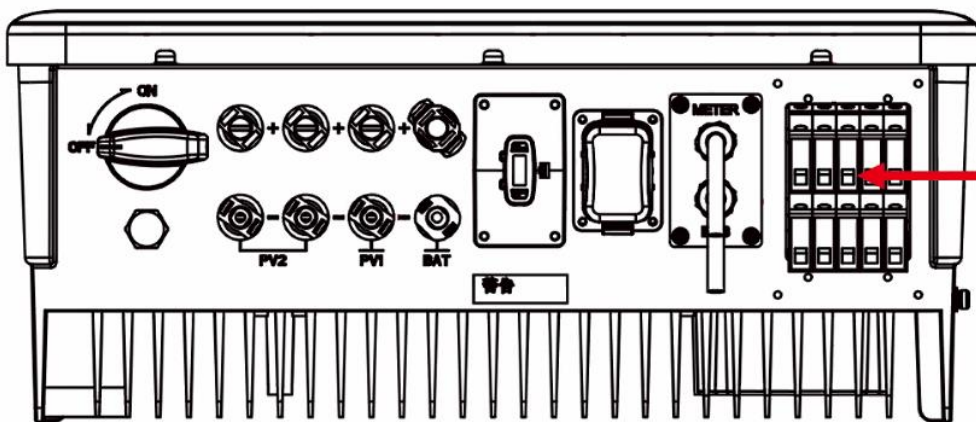
- Make sure that the DC switch is off before connecting the PV connectors.



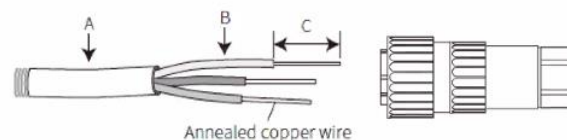
Zapojení el. sítě

ET: AC side

GOODWE
Smart Energy Innovator



**Connect the AC connectors
On-grid and Back-up**

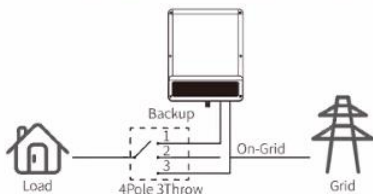


Check the connector specifications

The diagram shows a cross-section of a cable with four conductors. The labels A, B, C, and D indicate different dimensions: A is the outside diameter, B is the separated wire length, C is the conductor wire length, and D is the conductor core section.

| Grade | Description | Value |
|-------|------------------------|---------------------|
| A | Outside diameter | 13-18 mm |
| B | Separated wire length | 20-25 mm |
| C | Conductor wire length | 7-9 mm |
| D | Conductor core section | 4-6 mm ² |

For convenient maintenance, please install a SP 3T switch on both the backup and on-grid sides. Then it is adjustable to support load by backup or by grid or default settings.

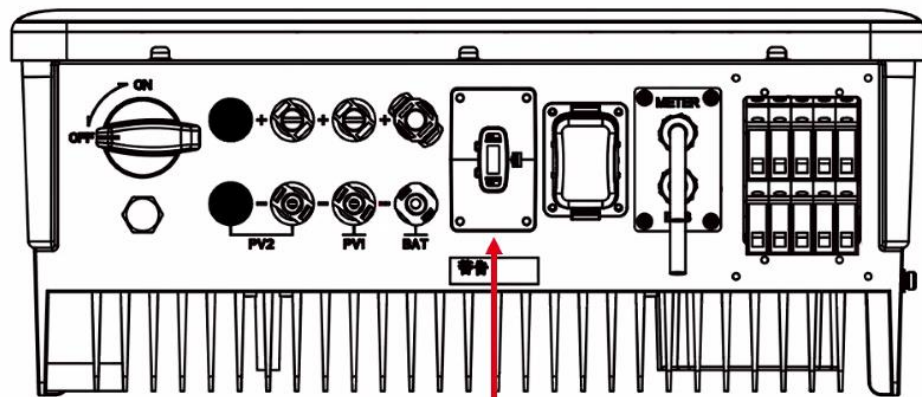


1. The backup load is supplied from backup side.
2. The backup load is isolated.
3. The backup load is supplied from grid side.

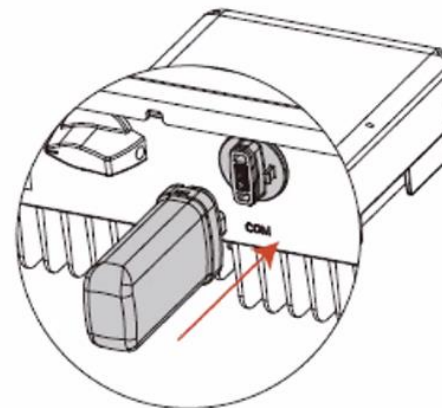
Zapojení WIFI/LAN

ET: Internet communication

GOODWE
Smart Energy Innovator



Insert the Wi-Fi / LAN / 4G module

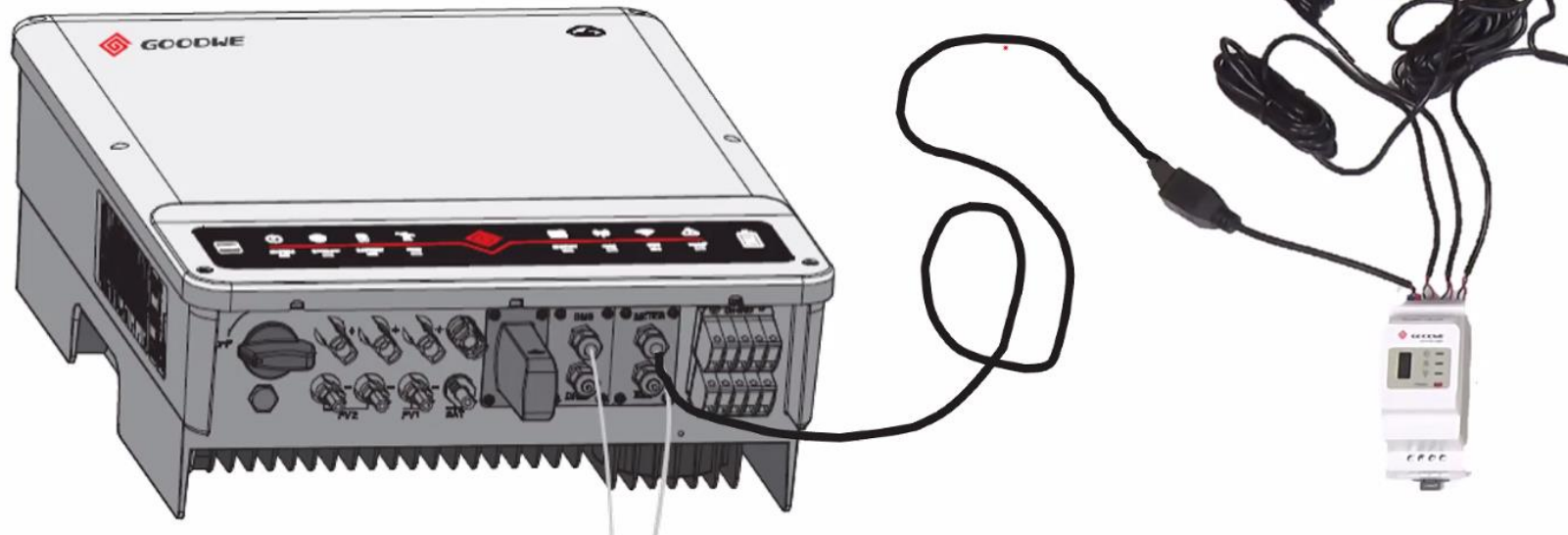


In case of 4G module, the Bluetooth USB-stick is first needed for commissioning and set up of 4G module

Zapojení smartmetru

Smart meter / current transformer connection

- Included in the scope of delivery
- Communication cable is pre-wired to the inverter
- Three current transformers are pre-wired to the smart meter
- Connect cable from inverter to RJ45 jack on smart meter

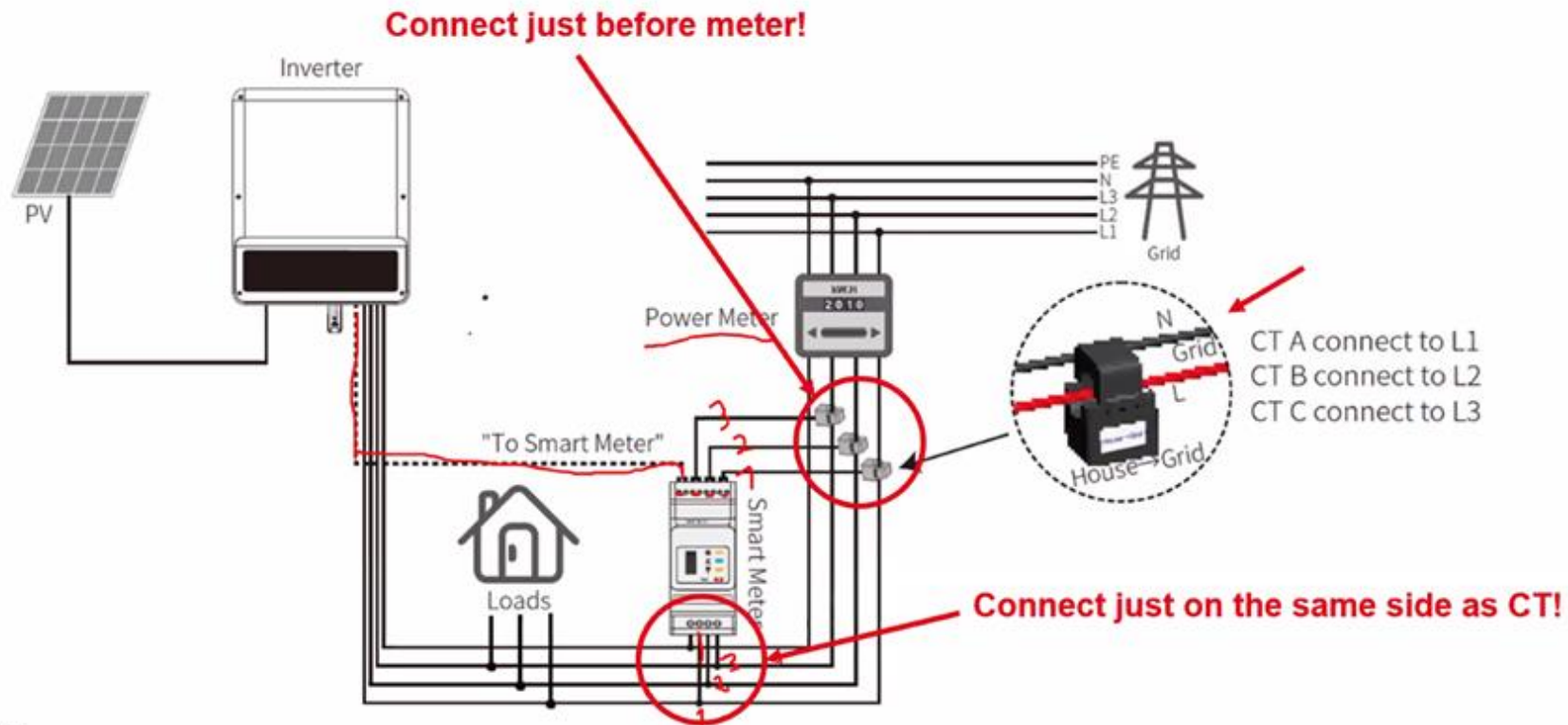


GOODWE
Smart Energy Innovator

Zapojení smartmetru

Connection of Smart Meter (GM3000)

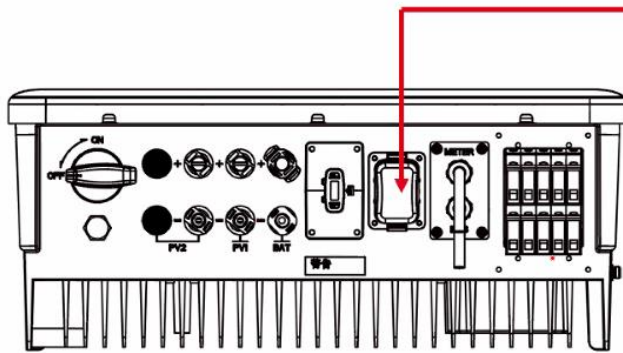
GOODWE
Smart Energy Innovator



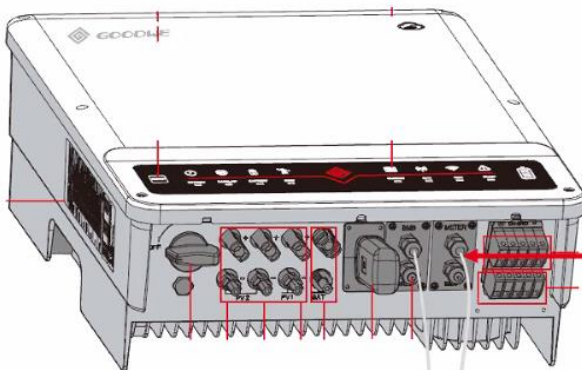
Zapojení komunikace

ET: SEC1000S

GOODWE
Smart Energy Innovator



- For new ET PLUS+ inverter, use communication port to connect RS485



- For older ET, unscrew the “Meter and EMS” port and attach the cable included in the SEC1000S box

Připojení k aplikaci

PV Master: Connect to the inverter

GOODWE
Smart Energy Innovator



*Scroll down the page to refresh device list.



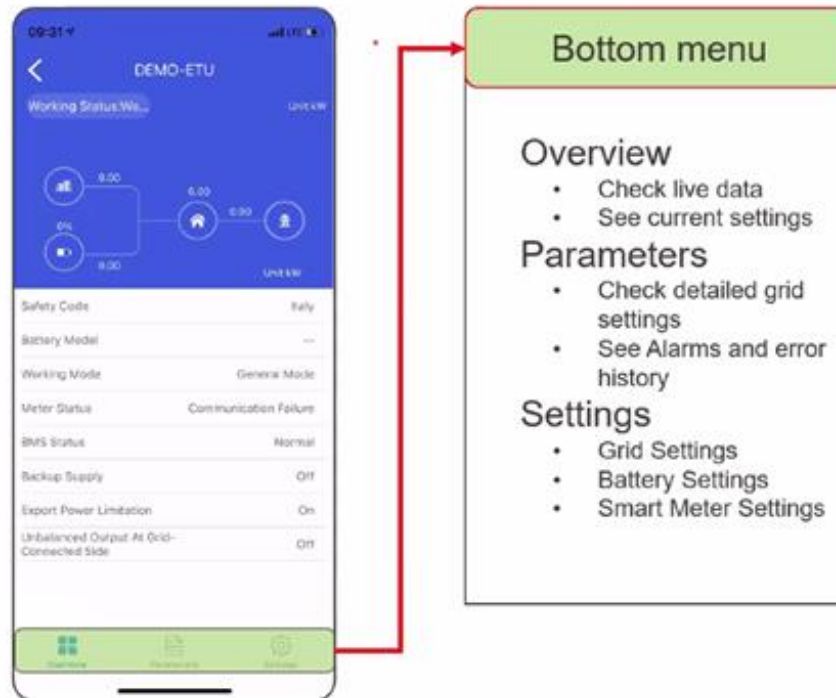
Solar-WIFI ***** Password: 12345678



SOL_BLE*****: last 8 characters of SN

Vlastnosti aplikace

PV Master: Introduction



Základní nastavení

PV Master: Basic Settings

GOODWE
Smart Energy Innovator

1 Select your country code

2 Select operation mode

3 Select battery model

The screenshots show the following steps:

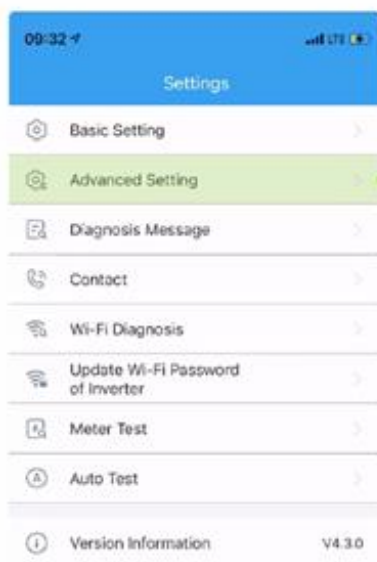
- Settings Menu:** The 'Basic Setting' option is highlighted in green.
- Select Safety Settings (V15):** A list of countries and regions is shown, including Africa, America, Asia, Europe, Oceania, and Other. A 'Next' button is at the bottom.
- Select Working Mode:** Four modes are displayed: General Mode, Forced Off-Bus Mode, Backup Mode, and Full Mode. A 'Next' button is at the bottom.
- Select Battery Model:** A list of battery manufacturers and models is shown, including PYLONTECH, GoodWe, OLOID, BYD, DYNES, Soluna, Default, and LG. 'Previous' and 'Next' buttons are at the bottom.

Pokročilé nastavení

PV Master: Advanced Settings



Password: goodwe2010



Activation of Backup function

Function for installations with much shadows

For connection of multiple inverters

Manual reset in case Backup loads are overloaded

Change Battery Settings



Omezení přetoků

The image shows two screenshots from a mobile application. The left screenshot is titled "Grid parameter setting" and has four red annotations with lines pointing to specific settings: "Activate the power export limit." points to the "Power limit" toggle switch; "Set the amount of power exported beyond the CTs. For zero export, input '0'." points to the "Power limit threshold 0" input field; "Activation of function for unbalanced output" points to the "Outbalanced Output" toggle switch; and "Power factor setting" points to the "Power factor 0.90" input field. The right screenshot is titled "Custom Safety Parameters" and shows a list of protection parameters under three categories: Voltage Protection Parameters, Frequency Protection Parameters, and Overfrequency. The Voltage Protection Parameters list includes: Overvoltage1 Protection Value (0.0V), Overvoltage1 Protection Time (0.00s), Undervoltage1 Protection Value (0.0V), and Undervoltage1 Protection Time (0.00s); Overvoltage2 Protection Value (0.0V), Overvoltage2 Protection Time (0.00s), Undervoltage2 Protection Value (0.0V), and Undervoltage2 Protection Time (0.00s); and 10 min Overvoltage Trigger Value (0.0V). The Frequency Protection Parameters list includes: Overfrequency1 Protection Value (0.00Hz). The Overfrequency section is partially visible at the bottom.

09:34 LTE

Grid parameter setting

Power limit

Enable to limit the output power of the inverter.

Power limit threshold 0 0 W ✓

The max. output power of inverter can generate at AC side.

Outbalanced Output

Enable to allowed unbalanced output power at different phases.

Power factor 0.90 0.90 ✓

Power factor input range is [-0.99,-0.8],[0.8,1]

Customize safety parameters

10:41 LTE

Custom Safety Parameters

Protection Parameters Connection Point Cui

Voltage Protection Parameters

| | |
|----------------------------------|---------|
| Overvoltage1 Protection Value | 0.0V > |
| Overvoltage1 Protection Time | 0.00s > |
| Undervoltage1 Protection Value | 0.0V > |
| Undervoltage1 Protection Time | 0.00s > |
| Overvoltage2 Protection Value | 0.0V > |
| Overvoltage2 Protection Time | 0.00s > |
| Undervoltage2 Protection Value | 0.0V > |
| Undervoltage2 Protection Time | 0.00s > |
| 10 min Overvoltage Trigger Value | 0.0V > |

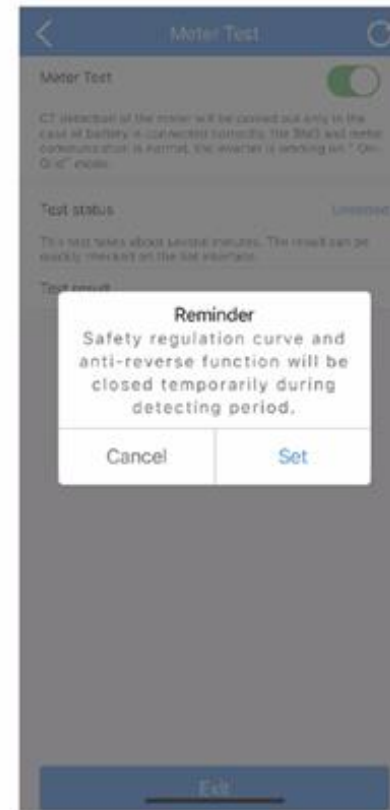
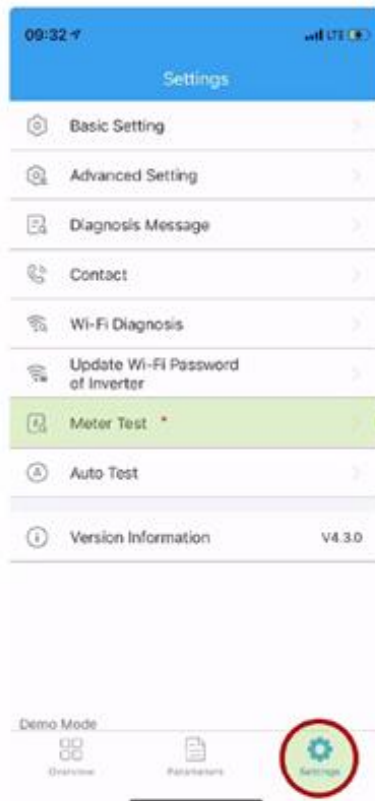
Frequency Protection Parameters

| | |
|---------------------------------|----------|
| Overfrequency1 Protection Value | 0.00Hz > |
|---------------------------------|----------|

Overfrequency1

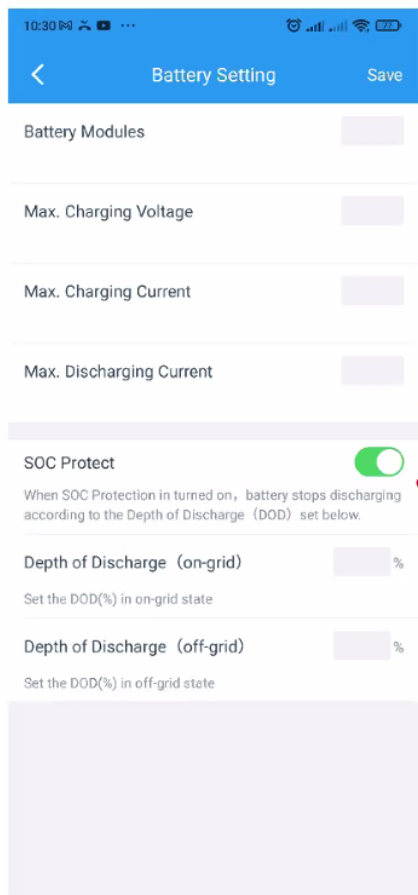
Test smartmetru

PV Master: Meter Test



Změna nastavení

Interface can look different for other inverters



Only for Lead Acid Batteries

Activation of custom DOD levels

Set the DOD levels for On-grid and Backup mode

Nastavení hloubky vybití

Interface can look different for other inverters

GOODWE
Smart Energy Innovator

The screenshot shows the 'Battery Setting' screen with the following settings and annotations:

- Battery Modules**: 1 module
- Max. Charging Voltage**: [Slider]
- Max. Charging Current**: [Slider]
- Max. Discharging Current**: [Slider]
- SOC Protect**: (Annotation: Activation of custom DOD levels)
- Depth of Discharge (on-grid)**: 75% (Annotation: Set the DOD levels for On-grid and Backup mode)
- Depth of Discharge (off-grid)**: 90% (Annotation: Set the DOD levels for On-grid and Backup mode)

Annotations on the right side of the screen:

- Only for Lead Acid Batteries (points to Max. Charging Voltage, Max. Charging Current, and Max. Discharging Current)
- Activation of custom DOD levels (points to SOC Protect)
- Set the DOD levels for On-grid and Backup mode (points to both Depth of Discharge settings)

SEMS portál

SEMS Portal

GOODWE
Smart Energy Innovator



Overview of all installed plants

Easily find if an error has occurred

Check generation of specific plant and total generation

[SEMS Demo Version](#)

Detail instalace

Specific Plant



System overview

- Created: 24.12.2018
- Classification: battery Storage
- PV Capacity: 20.00 kW
- Battery Capacity: 48 kWh
- Location:

Weather forecast

| Today | Tuesday | Wednesday | Thursday | Friday |
|-------|---------|-----------|----------|--------|
| --- | --- | --- | --- | --- |

Linked devices

Device information

| Model | GW10K-ET |
|-------------------|---------------------|
| S/N | 9010KETU198W0007 |
| Checkcode | 022437 |
| Capacity | 10 kW |
| Inner Temperature | 82.5 °C |
| Output Power | 7764 W |
| Output Voltage | 226.8/226.5/226 V |
| Back-up Output | 1050 W |
| Back-up Voltage | 232.7/231.4/232.2 V |

System Graph:

- Generation
- Load
- Export
- Import
- Etc.

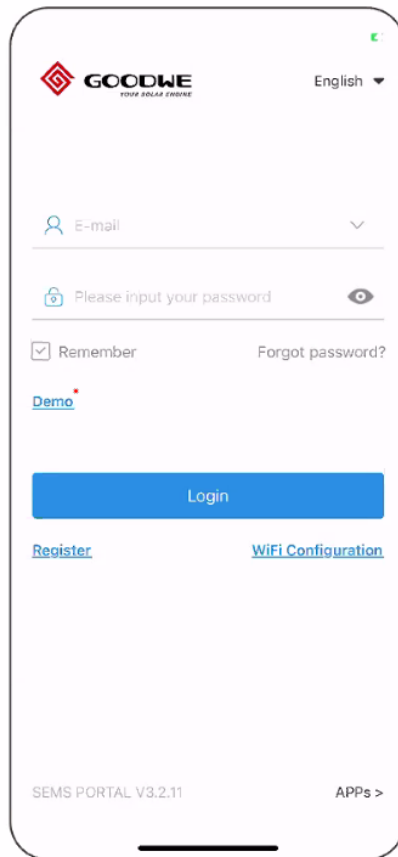
Advanced graphs:

- Power
- Current
- Voltage
- Frequency
- Etc...

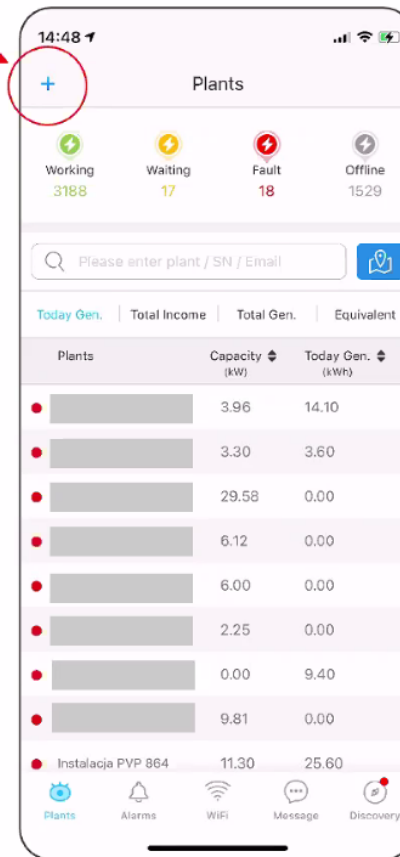
SEMS Aplikace

SEMS APP

GOODWE
Smart Energy Innovator



Add new plant

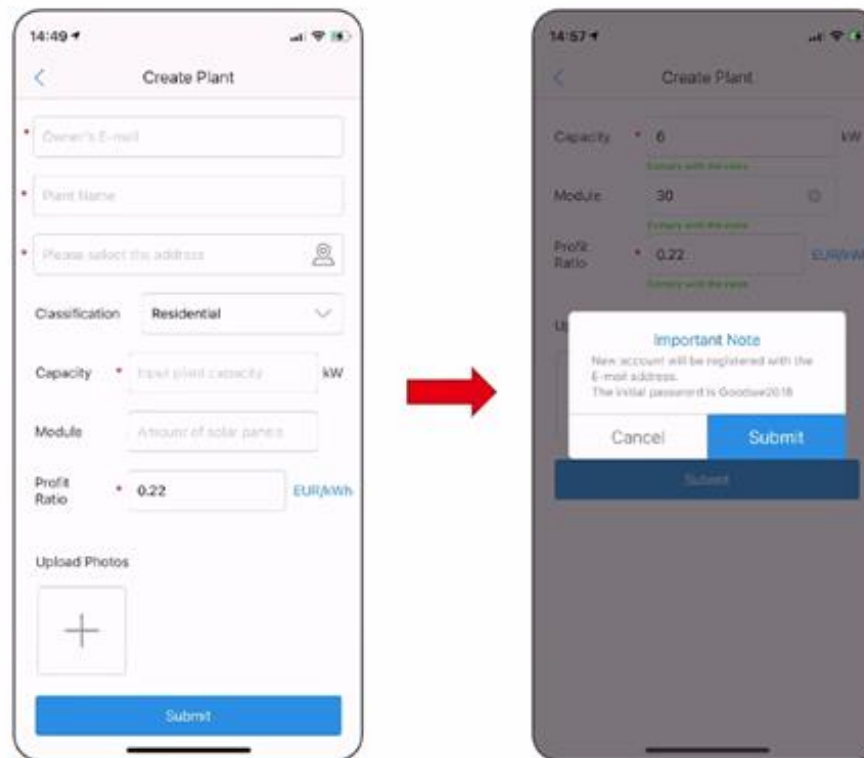


Vytvoření instalace a přidání uživatele

SEMS APP

GOODWE
Smart Energy Innovator

- Enter the fields
- Make sure that the owner's (end-user's) email address is correct
- Click "Submit"
- New End-user account will be created with initial password: Goodwe2018

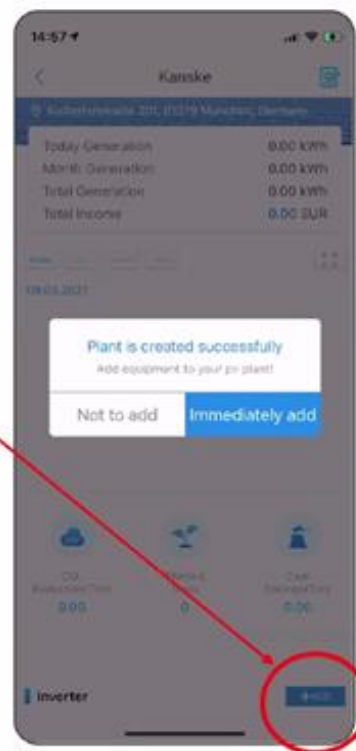


Přidání střídače

SEMS APP

GOODWE
Smart Energy Innovator

- Add Plant directly or later
- Scan QR code on the right side of the inverter. Or enter data manually
- Click on “Add inverter”



Detail instalace

SEMS APP

- See newly added plant
- See generation
- Control specific parameters
- Get alarms and fault messages

GOODWE
Smart Energy Innovator



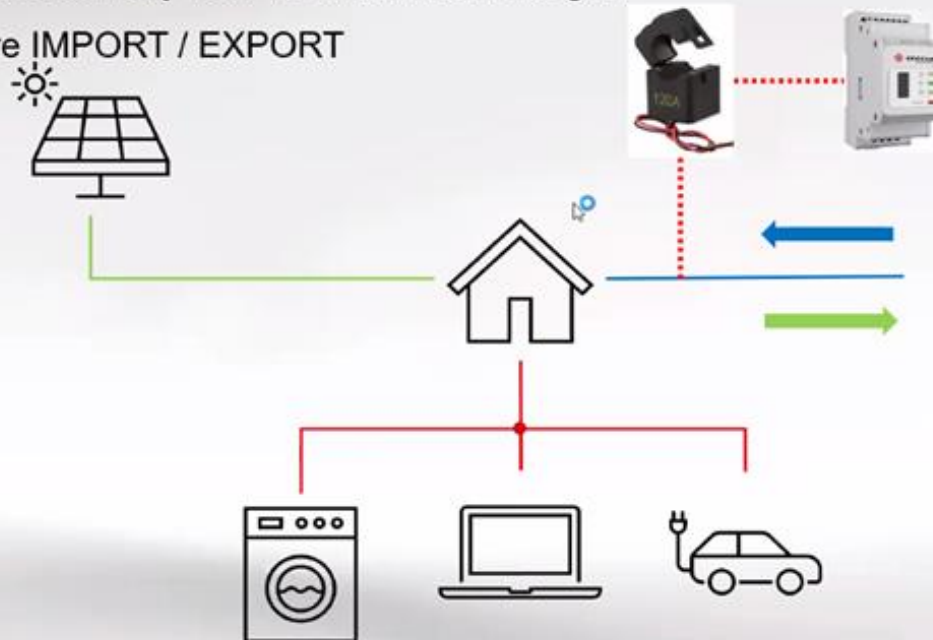
Časté chyby

Troubleshooting- Most common faults- Meter installation

GOODWE
Smart Energy Innovator

Correct meter installation is the first point to resolve this problem!

- CORRECT PLACEMENT IS **IMPORTANT!**
- CT's – measure electricity flow TO and FROM the grid
- CT's – measure IMPORT / EXPORT

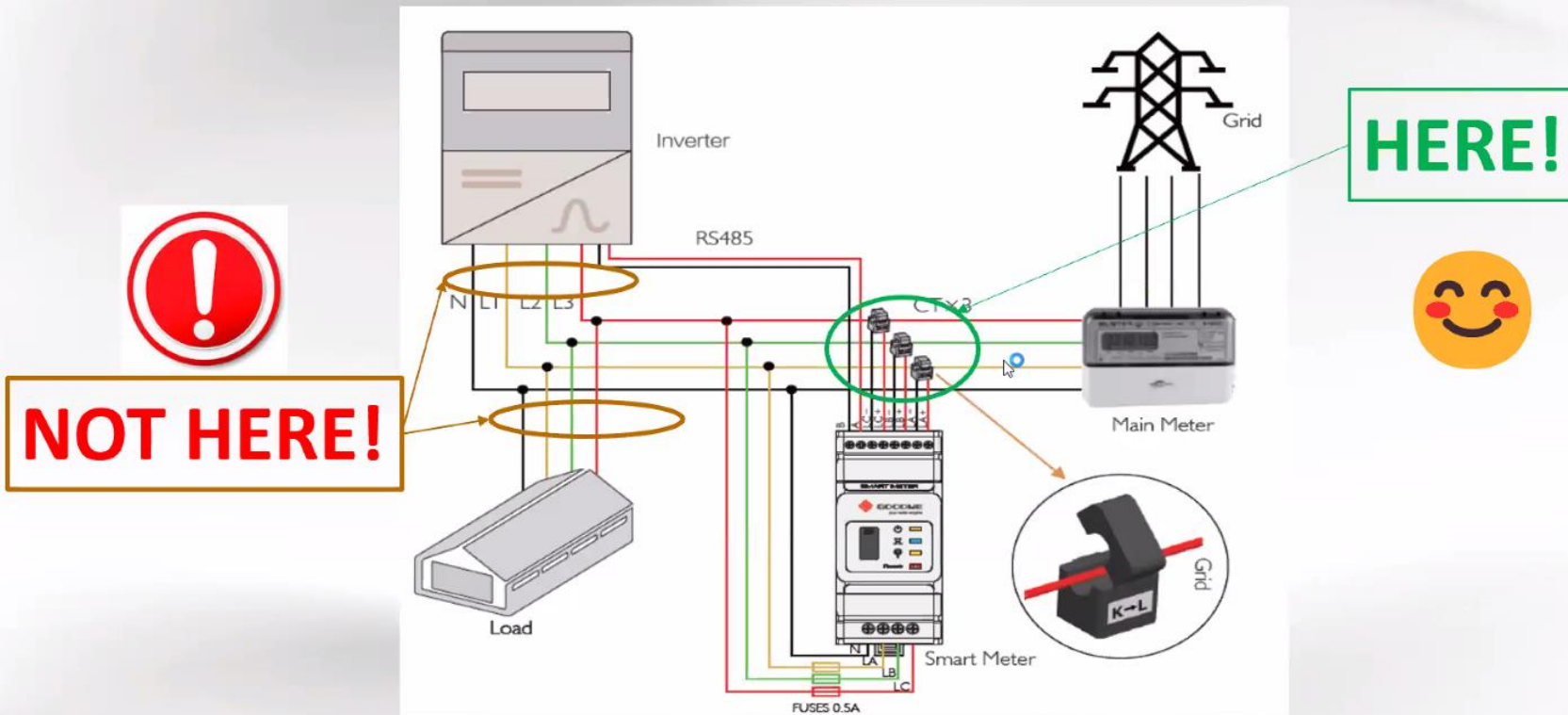


Časté chyby

Troubleshooting- Most common faults- Meter installation

GOODWE
Smart Energy Innovator

- **CT's must be installed after the REVENUE/MAIN meter ALWAYS BEFORE THE LOADS AND INVERTER!**



Časté chyby

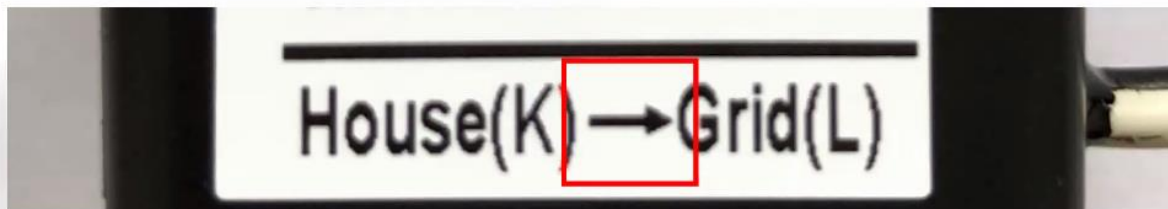
Troubleshooting- Most common faults- Meter installation

GOODWE
Smart Energy Innovator

- An ARROW is placed on each CT
- **ARROW MUST POINT TOWARDS GRID**



grid



Časté chyby

Troubleshooting- Most common faults- Meter installation

GOODWE
Smart Energy Innovator

- Each CT is labelled
- L1 – CT A, L2 – CT B, L3 – CT C

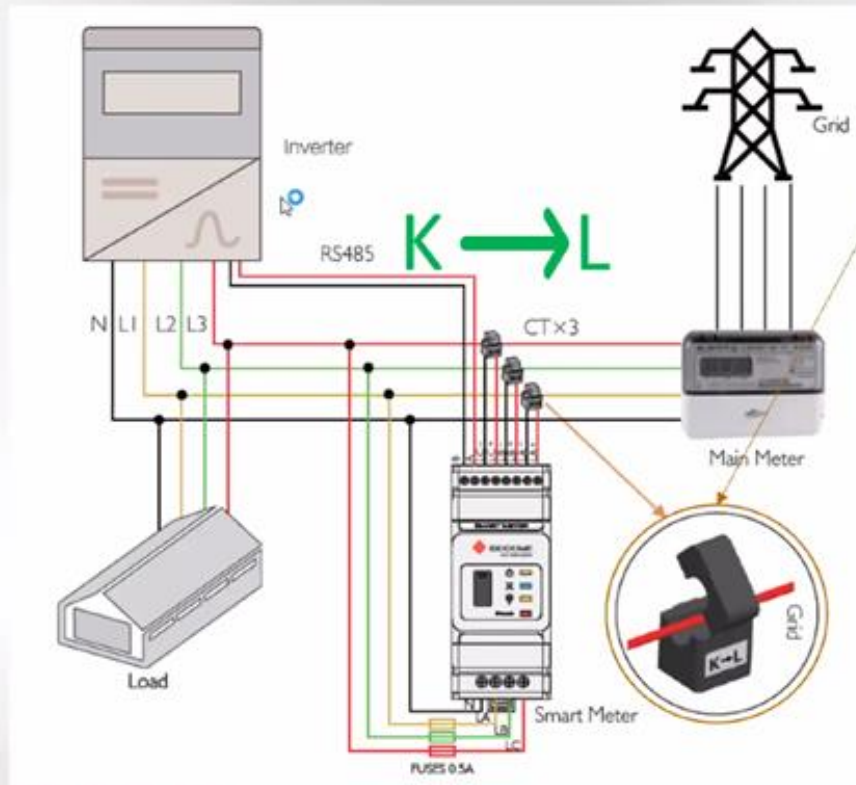


Časté chyby

Troubleshooting- Most common faults- Meter installation

GOODWE
Smart Energy Innovator

- Arrow must point towards Grid



- Arrow and L must point towards the GRID
- L does not mean „L“oads



L →



**L POINTING TO
INVERTER or LOADS
WRONG DIRECTION!**

Časté chyby

Troubleshooting- Most common faults- Meter installation

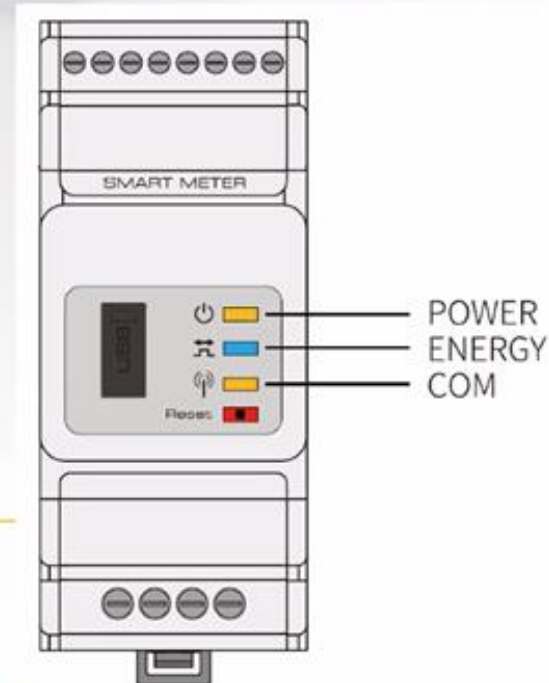


- TOP - **ORANGE LED** – Power – must be ON
- MIDDLE - **BLUE LED** – Energy Flow:
 - Solid – consuming
 - Blinking – exporting
- BOTTOM – **ORANGE LED** – Communication
 - Blinking – transmitting data
 - Resetting – blinks 5 times



Compare ENERGY FLOW to actual ON-SITE LOAD behaviour with a multi-meter.

- Turn on some loads – stove/kettle



Časté chyby

Smart Meter- Test unsuccessful or communication failure

GOODWE
Smart Energy Innovator



| | | |
|-------|--|---|
| COM | | ON = BMS and meter communications are OK |
| | | BLINK 1 = Meter communications are OK, BMS communications have failed |
| | | BLINK 2 = BMS communications are OK, meter communications have failed |
| | | OFF = BMS and meter communications have both failed |
| FAULT | | ON = A fault has occurred |
| | | BLINK1 = Overload of backup output/ reduce load |
| | | BLINK4 = CT wiring fault |
| | | OFF = No fault |



Lower LED does not flash

Časté chyby

Smart Meter- Test unsuccessful or communication failure

GOODWE
Smart Energy Innovator



| | | |
|-------|--|---|
| COM | | ON = BMS and meter communications are OK |
| | | BLINK 1 = Meter communications are OK, BMS communications have failed |
| | | BLINK 2 = BMS communications are OK, meter communications have failed |
| | | OFF = BMS and meter communications have both failed |
| FAULT | | ON = A fault has occurred |
| | | BLINK1 = Overload of backup output/ reduce load |
| | | BLINK4 = CT wiring fault |
| | | OFF = No fault |



Lower LED does not flash

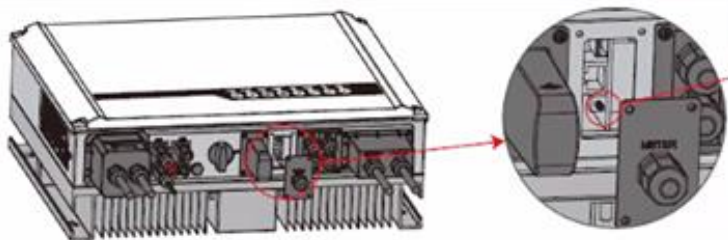
Časté chyby - Wifi

Troubleshooting – Wi-Fi

GOODWE
Smart Energy Innovator

What to do when:

- Cannot find Solar Wi-Fi
- See but cannot connect to Solar Wi-Fi
- Connected to Solar Wi-fi but cannot login to address 10.10.100.253
- Customer has a new router



ES/BT

Wi-Fi Reset button 5 to 10 Seconds








ET/BT



Časté chyby - Wifi

Troubleshooting – Wi-Fi

GOODWE
Smart Energy Innovator

| | | |
|------|--|--------------------------------------|
| WiFi |  | ON = WiFi CONNECTED / ACTIVE |
| |  | BLINK 1 = WiFi SYSTEM RESETTING |
| |  | BLINK 2 = WiFi NOT CONNECT TO ROUTER |
| |  | BLINK 4 = WiFi SERVER PROBLEM |
| |  | OFF = WiFi NOT ACTIVE |

- Customer network blocking communication
 - Ensure that the following port is not blocked by your router or firewall.
TCP port: 20001
- Unsupported characters in SSID or password
 - `~!@#\$%^&*()_+ = - [] / . , < > ? { } ; ' :
 - Please note Blank Spaces are not allowed in password or SSID
- The customers router may be out of range
- incorrect password used
- Update inverter ARM