EG4 ELECTRONICS

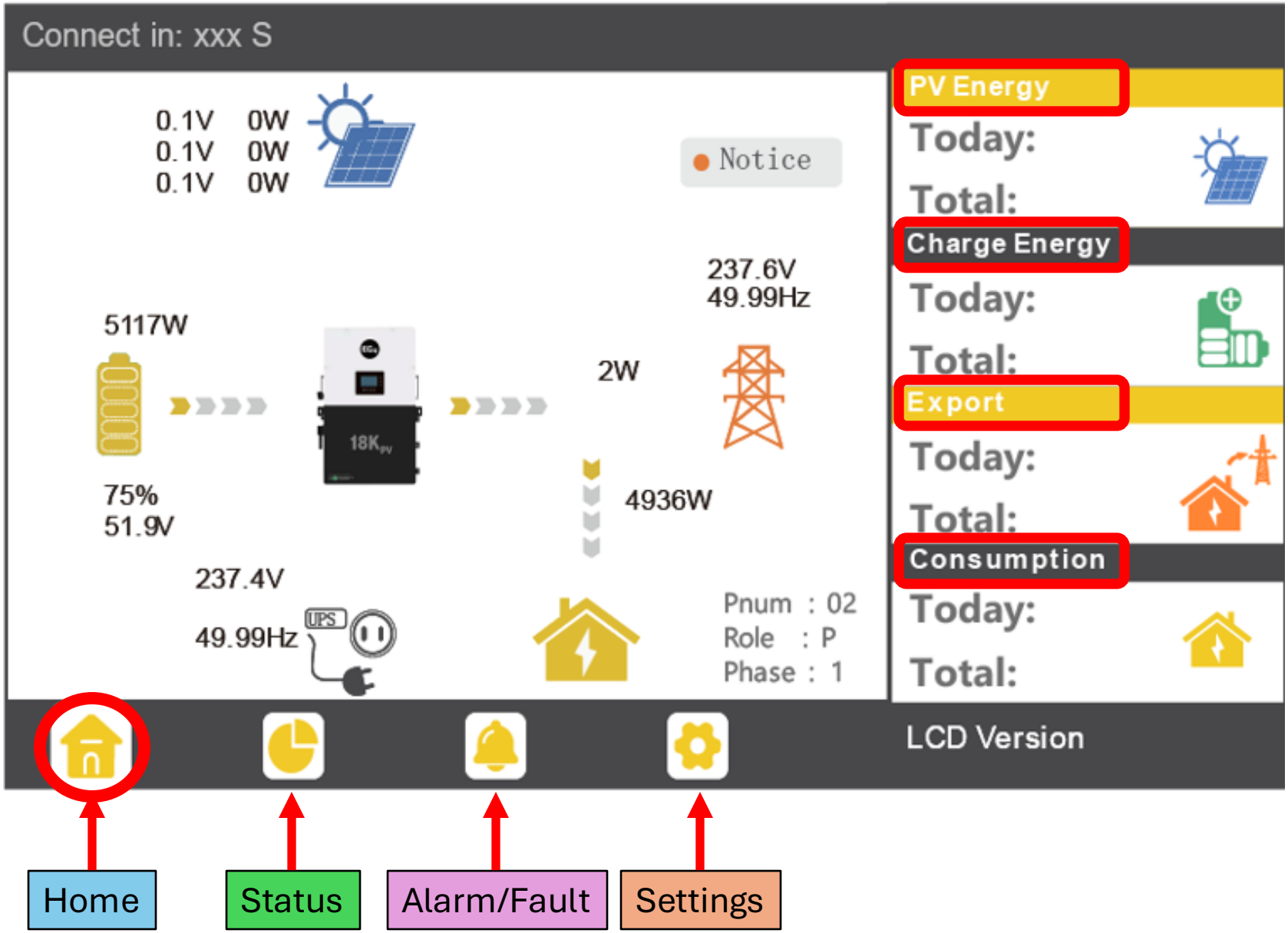
EG4 12kPV and 18kPV Menu Map

(based on LCD Version 13)

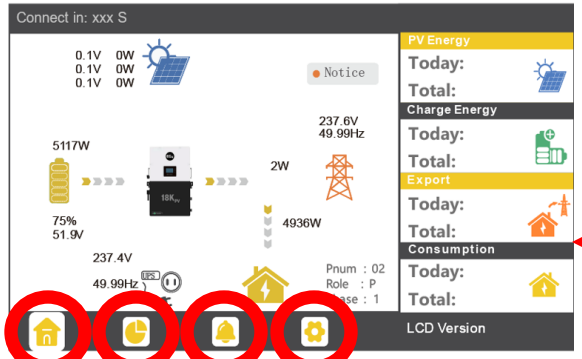
VERSION 1.0 | INFORMATION SUBJECT TO CHANGE WITHOUT NOTICE.

EG4 18kPV Main Menu with Home Selected

EG4 ELECTRONICS



EG4 ELECTRONICS



Main Menu

Home

- PV Energy
- Charge Energy
- Export
- Consumption

Status

- Solar
- Battery
- Grid
- UPS
- Other

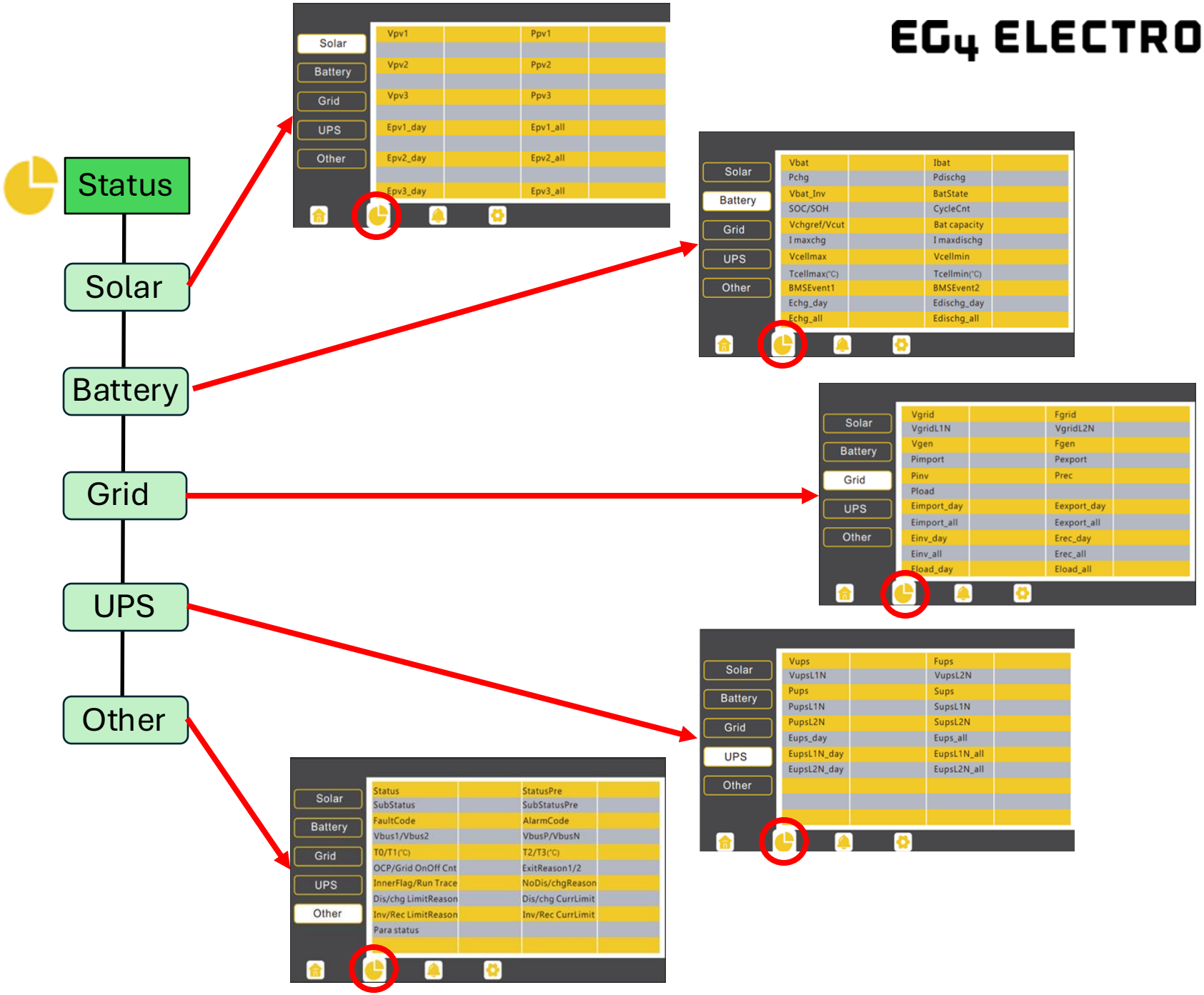
Alarm/Fault

- Fault Status
- Alarm Status
- Fault Record
- Alarm Record

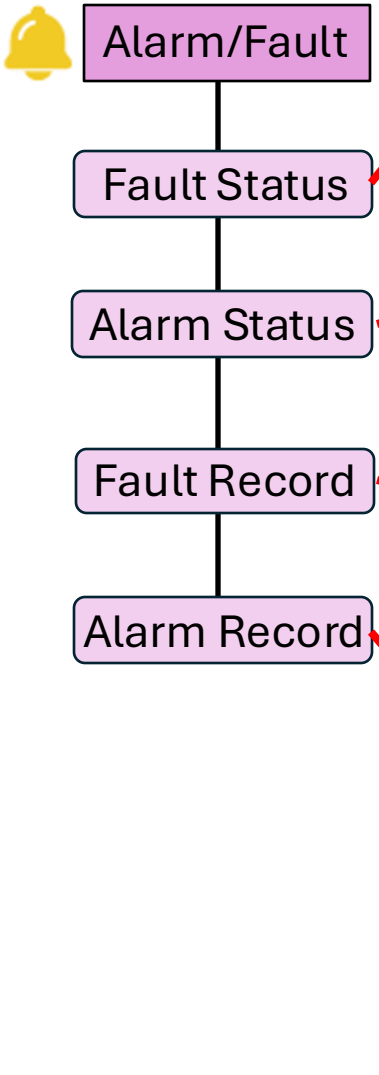
Settings

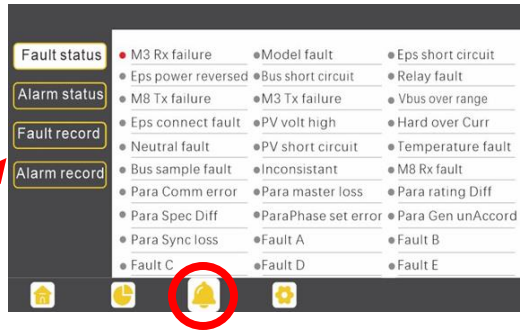
- Basic
- Charge
- Discharge
- Advanced
- Debug
- Device Info.

EG4 ELECTRONICS



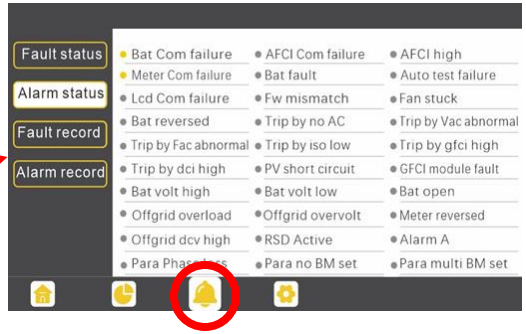
EG4 ELECTRONICS





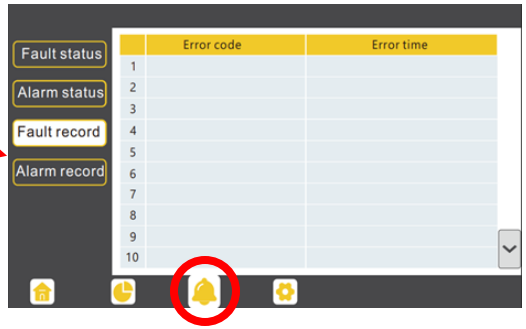
NOTE: If the dot on the left of the fault item is red, the fault is active.

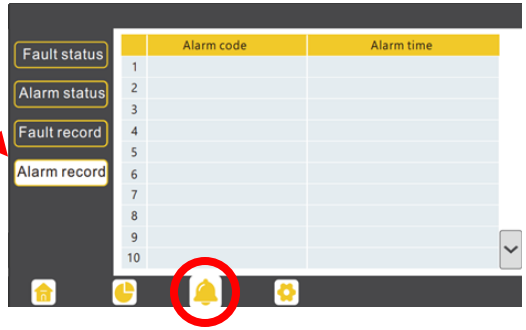
When the dot is grey, the fault is inactive.



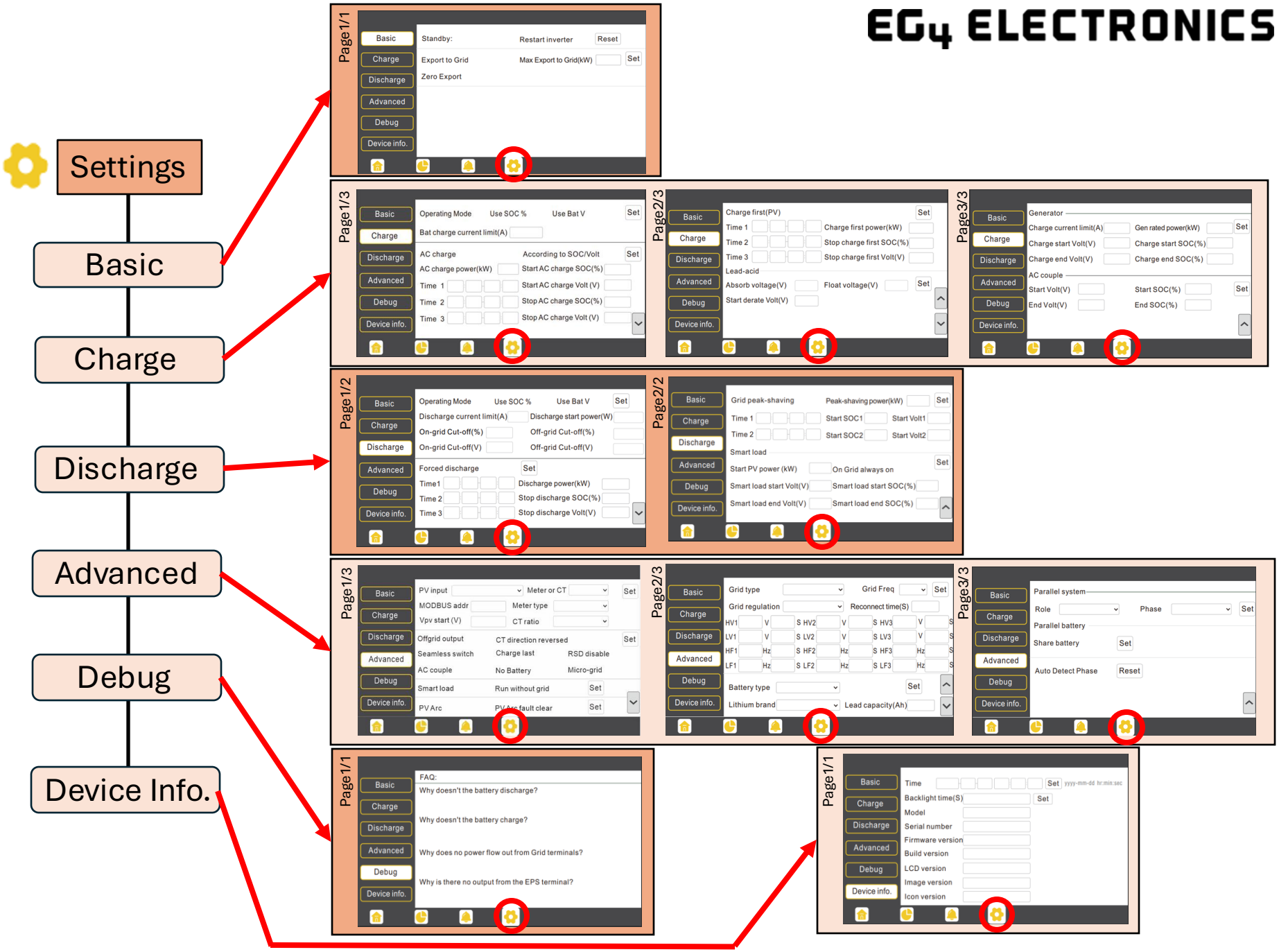
NOTE: If the dot on the left of the fault item is yellow, the fault is active.

When the dot is grey, the fault is inactive.

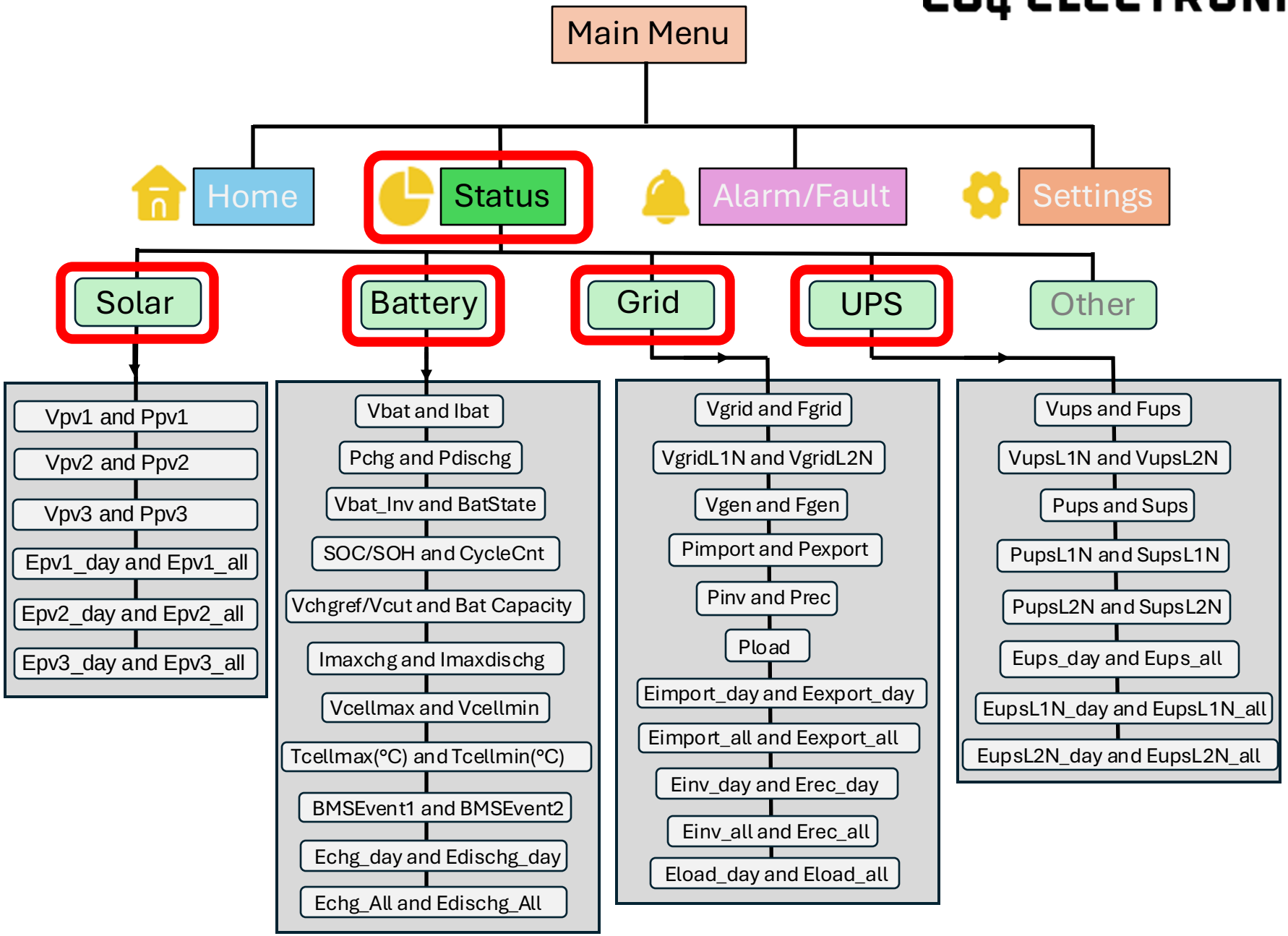


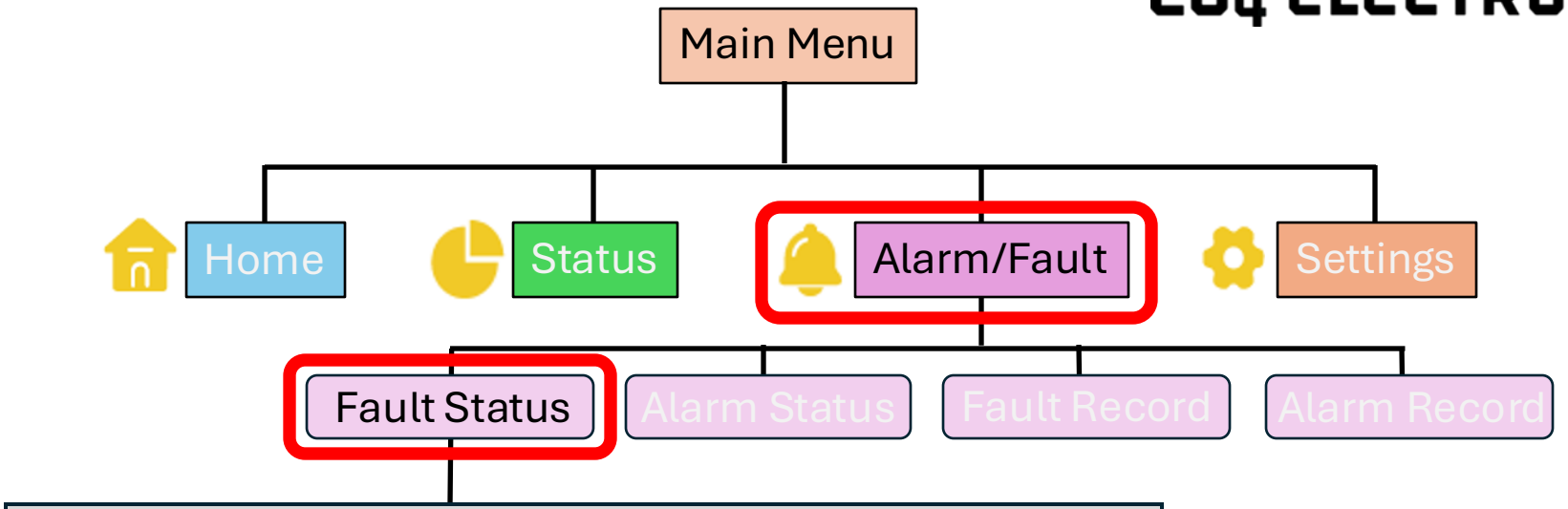


EG4 ELECTRONICS



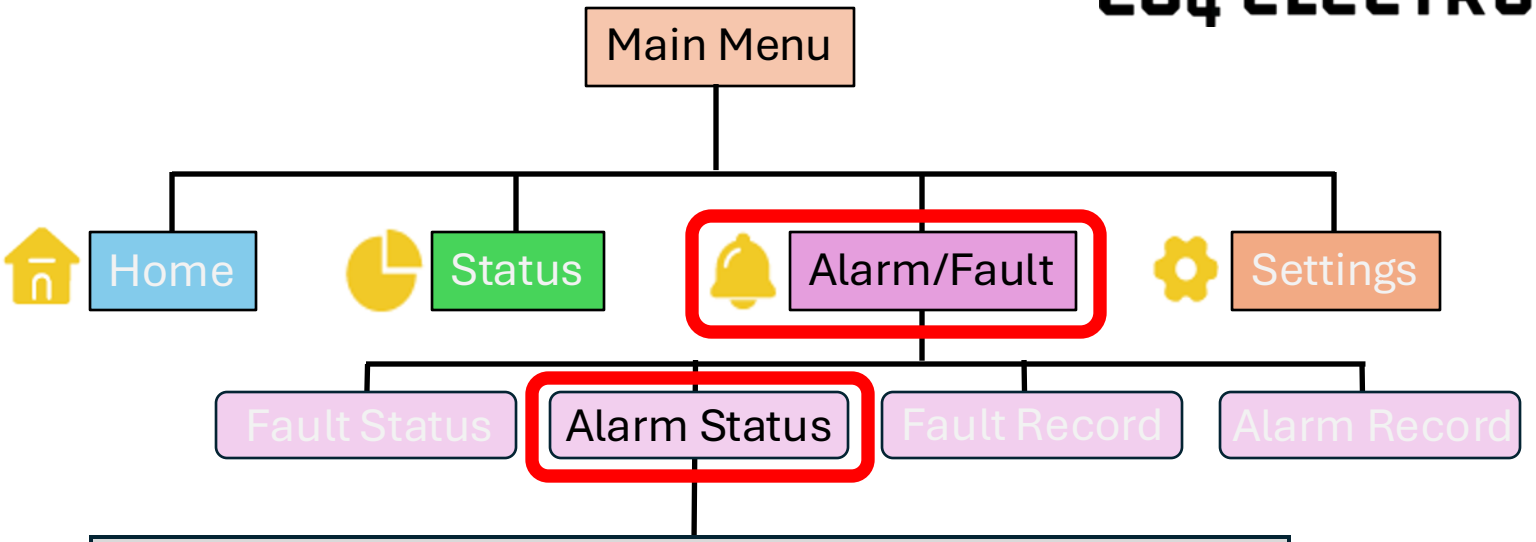
EG4 ELECTRONICS





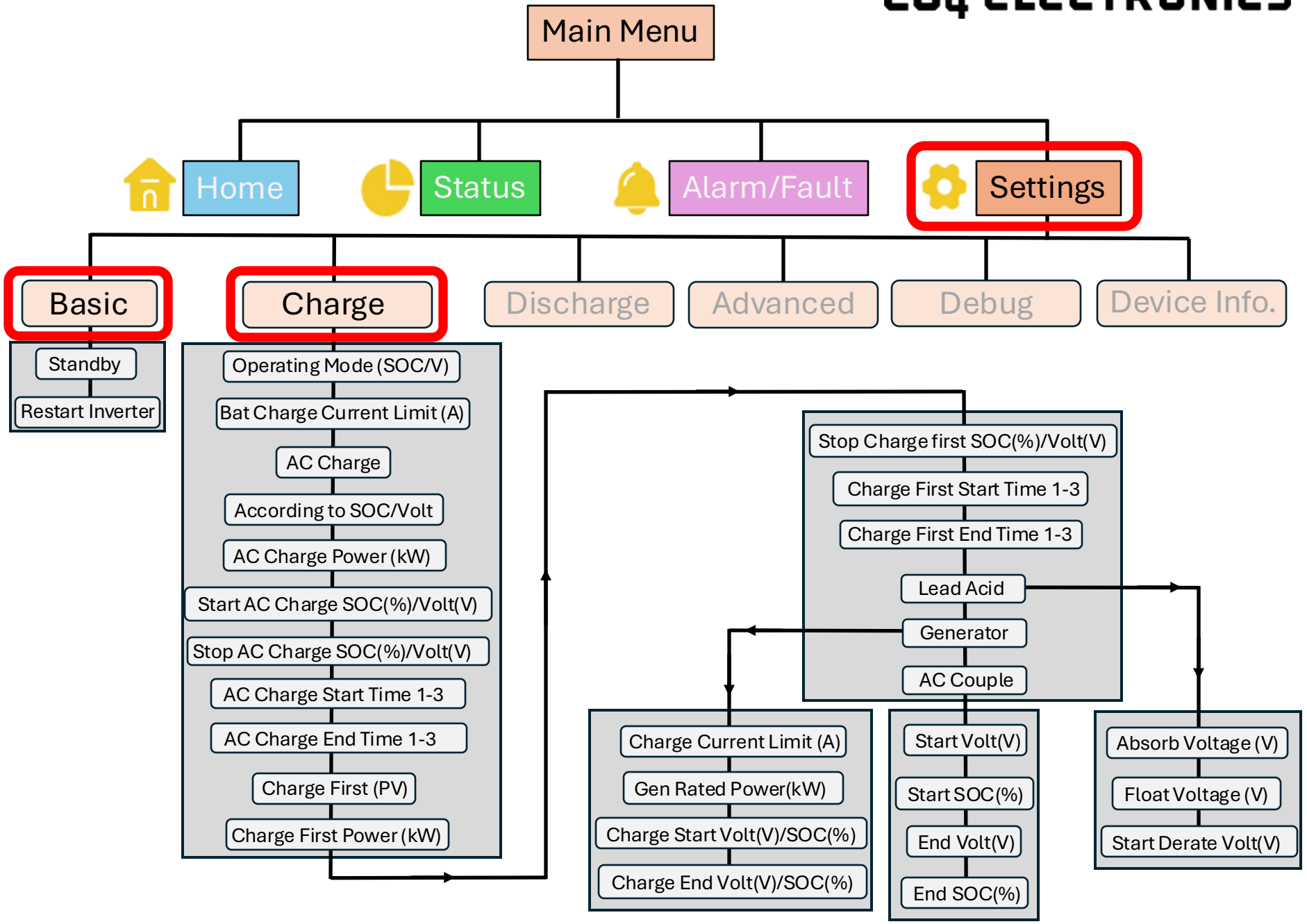
- M3 Rx failure
- Eps power reversed
- M8 Tx failure
- Eps connect fault
- Neutral fault
- Bus sample fault
- Para Comm error
- Para Spec Diff
- Para Sync loss
- Fault C
- Model fault
- Bus short circuit
- M3 Tx failure
- PV volt high
- PV short circuit
- Inconsistent
- Para master loss
- ParaPhase set error
- Fault A
- Fault D
- Eps short circuit
- Relay fault
- Vbus over range
- Hard over Curr
- Temperature fault
- M8 Rx fault
- Para rating Diff
- Para Gen unAccord
- Fault B
- Fault E

EG4 ELECTRONICS

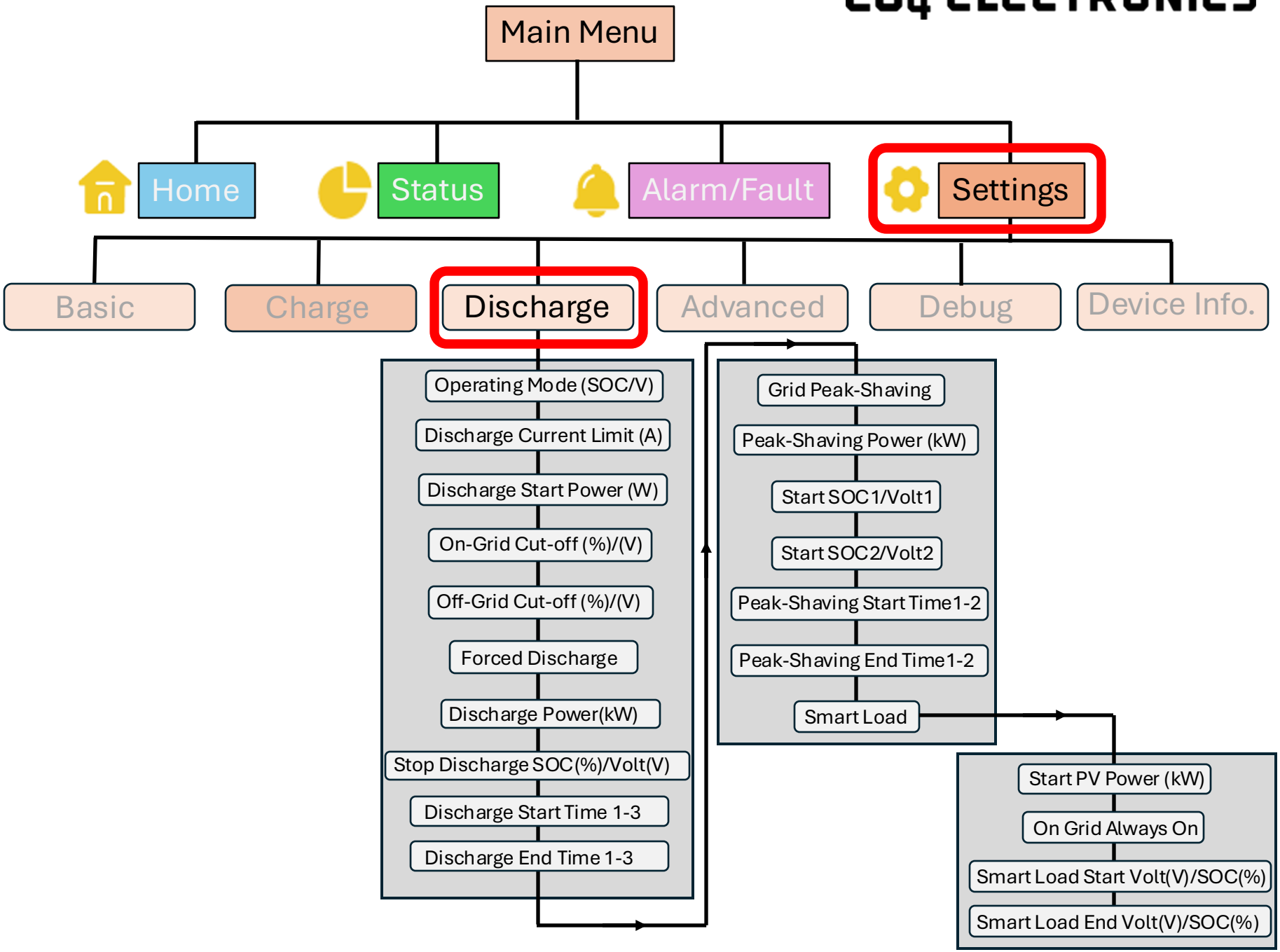


- Bat Com failure
- Meter Com failure
- Lcd Com failure
- Bat reversed
- Trip by Fac abnormal
- Trip by dci high
- Bat volt high
- Offgrid overload
- Offgrid dcv high
- Para Phase loss
- AFCI com failure
- Bat fault
- Fw mismatch
- Trip by no AC
- Trip by iso low
- PV short circuit
- Bat volt low
- Offgrid overvolt
- RSD active
- Para no BM set
- AFCI high
- Auto test failure
- Fan stuck
- Trip by Vac abnormal
- Trip by gfci high
- GFCI module fault
- Bat open
- Meter reversed
- Alarm A
- Para multi BM set

EG4 ELECTRONICS

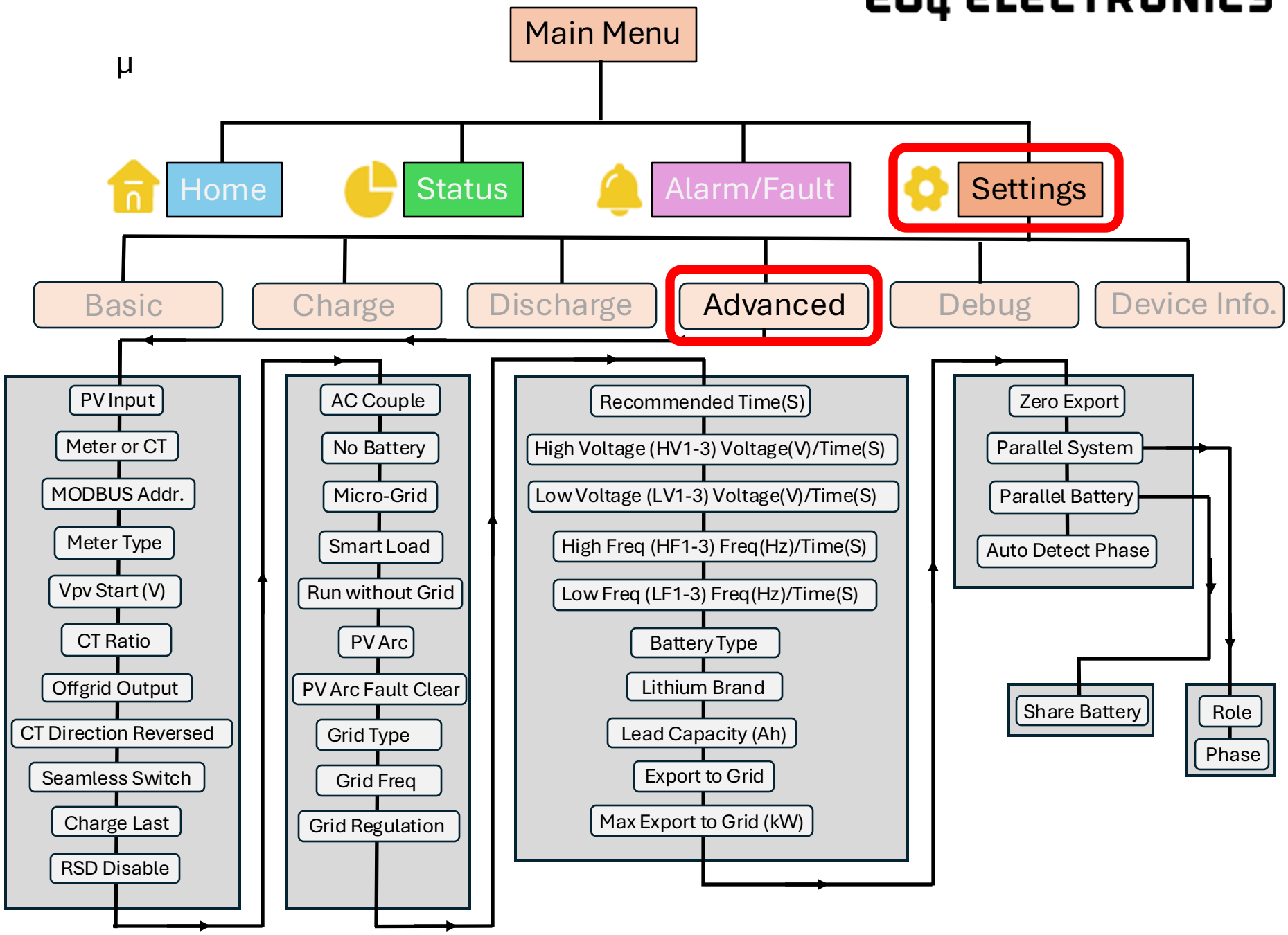


EG4 ELECTRONICS



EG4 ELECTRONICS

μ



Definitions

EG4 ELECTRONICS

Status

Solar

Vpv1: Voltage (V) of PV string 1
Ppv1: Power (W) of PV string 1
Vpv2: Voltage (V) of PV string 2
Ppv2: Power (W) of PV string 2
Vpv3: Voltage (V) of PV string 3
Ppv3: Power (W) of PV string 3
Epv1_day: Amount of energy(kWh) created by PV string 1 for the day
Epv1_all: Amount of energy(kWh) created by PV string 1 over the lifetime
Epv2_day: Amount of energy(kWh) created by PV string 2 for the day
Epv2_all: Amount of energy(kWh) created by PV string 2 over the lifetime
Epv3_day: Amount of energy(kWh) created by PV string 3 for the day
Epv3_all: Amount of energy(kWh) created by PV string 3 over the lifetime

Battery

Vbat: Battery Voltage (V) (from BMS reading or Lead-Acid mode)
Ibat: Battery Current (A) (from BMS reading)
Pchg: Charge Power (W)
Pdischg: Discharge Power (W)
Vbat_Inv: Battery Voltage (V) (from inverter sampling)
BatState: Battery status (charge/discharge Enable or Disable)
SOC/SOH: State of Charge and State of Health, both in %
CycleCnt: Battery cycle count
Vchgref/Vcut: Charge voltage limitation / Cut-off voltage limitation
Bat Capacity: Capacity of the battery in Amp-hours (Ah)
Imaxchg: Max charging current of the battery in Amps (A). If in Lead-Acid mode, this field is left blank
Imaxdischg: Max discharge current of the battery in Amps (A). If in Lead-Acid mode, this field is left blank
Vcellmax: Max cell voltage (V) of all battery cells reported by the BMS. If in Lead-Acid mode, this field is left blank
Vcellmin: Min cell voltage (V) of all battery cells reported by the BMS. If in Lead-Acid mode, this field is left blank
Tcellmax(°C): Max battery cell temperature (°C) reported by the BMS. If in Lead-Acid mode, this field is left blank
Tcellmin(°C): Min battery cell temperature (°C) reported by the BMS. If in Lead-Acid mode, this field is left blank
BMSEvent1: BMS Event 1 (Depends on BMS definition)
BMSEvent2: BMS Event 1 (Depends on BMS definition)
Echg_day: Amount of energy (kWh) used to charge the batteries for the day
Edischg_day: Amount of energy (kWh) discharged by the batteries for the day
Echg_All: Amount of energy (kWh) used to charge the batteries over the lifetime
Edischg_All: Amount of energy (kWh) discharged by the batteries over the lifetime

Grid

Vgrid: Grid L1-L2 voltage in Volts-rms (Vrms)
Fgrid: Grid frequency in Hertz (Hz)
VgridL1N: Grid L1-N voltage in Volts-rms (Vrms)
VgridL2N: Grid L2-N voltage in Volts-rms (Vrms)
Vgen: Generator L1-L2 output voltage in Volts-rms (Vrms)
Fgen: Generator frequency in Hertz (Hz)
Pimport: Power (W) imported from the grid
Pexport: Power (W) exported to the grid
Pinv: Power (W) converted from DC to AC by the inverter
Prec: Power (W) converted from DC to AC by the rectifier
Pload: Power (W) of the load
Eimport_day: Energy (kWh) imported from the grid for the day
Eexport_day: Energy (kWh) exported to the grid for the day
Eimport_all: Energy (kWh) imported from the grid over the lifetime
Eexport_all: Energy (kWh) exported to the grid over the lifetime
Einv_day: Energy (kWh) created by the inverter for the day
Erec_day: Energy (kWh) created by the rectifier for the day
Einv_all: Energy (kWh) created by the inverter over the lifetime
Erec_all: Energy (kWh) created by the rectifier over the lifetime
Eload_day: Energy (kWh) provided to the inverter load for the day
Eload_all: Energy (kWh) provided to the inverter load over the lifetime

UPS

Vups: L1-L2 output voltage (Vrms) at the inverter load terminals
Fups: Frequency (Hz) at the inverter load terminals
VupsL1N: Voltage (Vrms) of Line 1 (L1) to Neutral (N) at the inverter load terminals
VupsL2N: Voltage (Vrms) of Line 2 (L2) to Neutral (N) at the inverter load terminals
Pups: Real Power (W) at the inverter load terminals
Sups: Apparent Power (VA) at the inverter load terminals
PupsL1N: Real Power (W) of Line1 (L1) to Neutral (N) at the inverter load terminals
SupsL1N: Apparent Power (VA) of Line1 (L1) to Neutral (N) at the inverter load terminals
PupsL2N: Real Power (W) of Line2 (L2) to Neutral (N) at the inverter load terminals
SupsL2N: Apparent Power (VA) of Line2 (L2) to Neutral (N) at the inverter load terminals
Eups_day: Energy (kWh) provided to the load terminals for the day
Eups_all: Energy (kWh) provided to the load terminals over the lifetime
EupsL1N_day: Energy (kWh) provided to Line1 (L1) to Neutral (N) for the day
EupsL1N_all: Energy (kWh) provided to Line1 (L1) to Neutral (N) over the lifetime
EupsL2N_day: Energy (kWh) provided to Line2 (L2) to Neutral (N) for the day
EupsL2N_all: Energy (kWh) provided to Line2 (L2) to Neutral (N) over the lifetime

EG4 ELECTRONICS

Other

Status: Inverter status (work mode)
StatusPre: Previous status, debug data used by manufacturer
SubStatus: Subsequent status, debug data used by manufacturer
SubStatusPre: Previous subsequent status, debug data used by manufacturer
FaultCode: Fault code
AlarmCode: Alarm code
Vbus1/Vbus2: Voltage on internal inverter BUS1 and BUS2
VbusP/VbusN: Positive half voltage of BUS1 / Negative half voltage of BUS1
T0/T1(°C): Temperature in °C at temp test points T0 (BDC(L)—Low voltage board) and T1 (BDC(TF)—Transformer)
T2/T3(°C): Temperature in °C at temp test points T2 (INV—INV board) and T3 (BDC(H)—DC High voltage board)
OCP/Grid OnOffCnt: Count for on-grid and off-grid switching
ExitReason1/2: Debugging data 2 used by manufacturer. Displayed as “Vepss” and “Vepst” in the Monitoring SW.
InnerFlag/Run Trace: Debugging data 3 used by manufacturer
NoDis/chgReason: Debugging data 4 used by manufacturer
Dis/chg LimitReason: Debugging data 5 used by manufacturer
Dis/chg CurrLimit: Debugging data 6 used by manufacturer
Inv/Rec LimitReason: Debugging data 7 used by manufacturer
Inv/Rec CurrLimit: Debugging data 8 used by manufacturer
Para Status: A code identifying the status of parallel connections. Debugging data used by the manufacturer

Fault Status

M3 Rx Failure: M3 microprocessor fails to receive data
Model fault: Incorrect model value
Eps short circuit: Inverter detected short-circuit on load output terminals
Eps power reversed: Inverter detected power flowing into load terminal(s)
Bus short circuit: DC bus is short circuited
Relay fault: Relay abnormal
M8 Tx failure: DSP fails to receive data from M8 microprocessor
M3 Tx failure: DSP fails to receive data from M3 microprocessor
Vbus over range: DC bus voltage too high
Eps connect fault: Load terminal and grid terminal are wired incorrectly or reversed
PV volt high: PV voltage is too high
Hard over Curr: Hardware level over current protection triggered
Neutral fault: Voltage between Neutral (N) and Ground (G) is greater than 30V
PV short circuit: Short circuit detected on PV input
Temperature fault: Heat sink temperature too high
Bus sample fault: Inverter detected DC bus voltage lower than PV input voltage
Inconsistent: Sampled grid voltage values of DSP and M8 microprocessor are inconsistent
M8 Rx fault: M8 microprocessor fails to receive data from DSP
Para Comm error: Parallel communication abnormal
Para master loss: No Master in the parallel system
Para rating Diff: Rated powers of parallel inverters are inconsistent
Para Spec Diff: Specifications of parallel inverters are inconsistent. Grid rules differ in Parallel configuration
ParaPhase set error: Incorrect setting of phase in parallel configuration
Para Gen unAccord: Generator input inconsistent in parallel configuration
Para Sync loss: Parallel inverter fault. Synchronization trigger signal lost in parallel configuration
Fault A: Manufacturer defined fault A (reserved for manufacturer)
Fault B: Manufacturer defined fault B (reserved for manufacturer)
Fault C: Manufacturer defined fault C (reserved for manufacturer)
Fault D: Manufacturer defined fault D (reserved for manufacturer)
Fault E: Manufacturer defined fault E (reserved for manufacturer)

Alarm Status

Bat Com failure: Inverter fails to communicate with battery
AFCI com failure: Inverter fails to communicate with AFCI module
AFCI high: PV arc fault is detected
Meter Com failure: Inverter fails to communicate with the meter
Bat fault: Battery cannot charge or discharge
Auto test failure: Auto test fault of (Italian) CEI0-21 regulations
Lcd Com failure: LCD fails to communicate with M3 microprocessor
Fw mismatch: Firmware version mismatch between the microprocessors
Fan stuck: Cooling fan(s) stuck
Bat reversed: The battery positive and negative cables are reversed
Trip by no AC: An alarm tripped due to no AC power present
Trip by Vac abnormal: An alarm tripped due to AC voltage being out of range
Trip by Fac abnormal: An alarm tripped due to AC frequency being out of range
Trip by iso low: An alarm tripped due to poor/low PV isolation
Trip by gfci high: Inverter detected leakage current on AC side
Trip by dci high: Inverter detected high DC injection current on Grid terminal
PV short circuit: Inverter detected a short circuit in PV input
GFCI module fault: GFCI module is abnormal
Bat volt high: Battery voltage too high
Bat volt low: Battery voltage too low
Bat open: Battery is disconnected from the inverter
Offgrid overload: Overload on Load terminal
Offgrid overvolt: Load voltage is too high
Meter Reversed: Meter connection is reversed
Offgrid dcv high: High DC voltage component on load output when running off-grid
RSD active: Rapid Shut Down is activated
Alarm A: Reserved for manufacturer debug use
Para Phase loss: Phase synchronization in parallel configuration has been lost
Para no BM set: Master is not set in the parallel system
Para multi BM set: Multiple Masters have been set in the parallel system

Settings

Basic

Standby: Enter Inverter in Standby mode
Restart Inverter: Restart the inverter

Charge

Operating Mode (SOC/V): Select SOC or Voltage as the threshold used for battery charging
Bat Charge Current Limit (A): Max battery charging current in Amps (A)
AC Charge: Enables battery charging from the Grid
According to SOC/Volt: Enables AC Charging according to SOC (Lithium) or Voltage (Lead Acid)
AC Charge Power (kW): Enter max AC charge power (kW) from the grid
Start AC Charge SOC(%)/Volt(V): Enter SOC(%) or Voltage(V) threshold at which AC charging of batteries begins
Stop AC Charge SOC(%)/Volt(V): Enter SOC(%) or Voltage(V) threshold at which AC charging of batteries stops
AC Charge Start Time 1-3: Enter up to three times at which AC charging of batteries will begin
AC Charge End Time 1-3: Enter up to three times at which AC charging of batteries will stop
Charge First PV: Prioritizes charging batteries with PV first
Charge First Power (kW): Enter the amount of PV power in kW to use for battery charging
Start Charge first SOC(%)/Volt(V): Enter SOC(%) or Voltage(V) threshold at which PV charging of batteries begins
Stop Charge first SOC(%)/Volt(V): Enter SOC(%) or Voltage(V) threshold at which PV charging of batteries stops
Charge First Start Time 1-3: Enter up to three times at which PV charging of batteries will begin
Charge First End Time 1-3: Enter up to three times at which PV charging of batteries will stop

Charge

Lead Acid:
Absorb Voltage: Enter voltage (V) to charge lead-acid batteries with during constant voltage mode (Absorption)
Float Voltage: Enter voltage (V) used to float charge the lead-acid batteries
Start Derate Volt(V): Enter derating voltage for the lead-acid batteries. Battery output power will be reduced when the battery voltage drops below this threshold. Applies to Lead-Acid batteries and on-grid mode.

Generator:
Charge Current Limit(A): Enter max battery charge current from the generator in Amps (A)
Gen Rated Power(kW): Enter the rated output power of the generator in kW. You can limit the battery charge power based on the detected inverter's load consumption and Generator input power limitations.
Charge Start Volt(V)/SOC(%): Enter the Voltage (V) or SOC (%) at which battery charging with the generator will begin
Charge End Volt(V)/SOC(%): Enter the Voltage (V) or SOC (%) at which battery charging with the generator will stop

AC Couple:
Start Volt(V): Enter the battery voltage(V) threshold at which AC coupled power (e.g. from an AC-coupled micro-grid) will begin charging the batteries when off-grid.
Start SOC(%): Enter the battery SOC(%) threshold at which AC coupled power (e.g. from an AC-coupled micro-grid) will begin charging the batteries when off-grid.
End Volt(V): Enter the battery voltage(V) threshold at which AC coupled power (e.g. from an AC-coupled micro-grid) will stop charging the batteries when off-grid.
End SOC(%): Enter the battery SOC(%) threshold at which AC coupled power (e.g. from an AC-coupled micro-grid) will stop charging the batteries when off-grid.

Discharge

Operating Mode (SOC/V): Select SOC or Voltage as the threshold used for battery discharging
Discharge Current Limit (A): Max battery discharging current in Amps (A)
Discharge Start Power (W): The minimum value can be set to 50 Watts. When the inverter detects the import power is higher than this value, the battery starts discharging; otherwise, the battery will stay in standby
On-Grid Cut-off (%)/(V): SOC(%) and Voltage(V) thresholds for ending discharge of batteries when on-grid
Off-Grid Cut-off (%)/(V): SOC(%) and Voltage(V) thresholds for ending discharge of batteries when off-grid
Forced Discharge: This setting will force the battery to discharge within the programmed period. In the preset period, the inverter will discharge the battery at the power set by 'Discharge power(kW)' until battery SOC or voltage reaches 'Stop discharge' value.
Discharge Power kW): Max power (kW) allowed to be discharged from the batteries
Stop Discharge SOC(%)/Volt(V): SOC(%) and Voltage(V) thresholds for stopping discharge of batteries
Discharge Start Time 1-3: Enter up to three times at which batteries will begin discharging
Discharge End Time 1-3: Enter up to three times at which batteries will stop discharging
Grid Peak-Shaving: Enables the peak-shaving feature. Peak-Shaving is used to avoiding peak demand charges from the grid. Peak shaving can be accomplished by halting Grid Charging at specific times. For example, during periods of peak demand (i.e., high grid rates), or when the batteries are near fully charged based on SOC and Voltage
Peak-Shaving Power (kW): Enter the max power that the inverter can draw from the grid
Start SOC1/Volt1: The threshold at which Peak-Shaving starts (Battery SOC/Volt < Threshold)
Start SOC2/Volt2: The threshold at which Peak-Shaving stops. (Battery SOC/Volt > SOC1/Volt1 +5%.
Peak-Shaving Start Time 1-2: The time of day at which charging by the grid will be halted.
Peak-Shaving End Time 1-2: The time of day at which charging by the grid will resume.
Smart Load(*): This function will make the inverter GEN input connection point a load connection point. If enabled, the inverter will supply power to this load when the battery SOC and PV power are above user set values.
Start PV Power (kW): This is the min. PV power limit to function with smart load output.
On-Grid Always On: Once this function is enabled, smart load will always function when grid power is on.
Smart Load Start Volt(V)/SOC(%): The high threshold for battery to turn on smart load
Smart Load End Volt(V)/SOC(%): The low threshold for battery to turn off smart load

(*)For Example: Smart load start SOC=90% Smart load end SOC=85%, Start PV power=1kW means:
When the PV power exceeds 1000W, and the battery system SOC gets to 90%, the Smart Load Port (GEN) will automatically switch on to power the connected load.
When the battery reaches SOC<85% or PV power<1000W, the Smart Load Port automatically switches off.

Important Note:
If the smart load function is enabled, a generator cannot be connected at the same time; otherwise, the device will be damaged!

Advanced

PV Input: Number and configuration of PV String inputs to inverter
Meter or CT: Type of AC measurement device, meter or Current Transformer (CT)
MODBUS Addr.: Address of the MODBUS communication connection
Meter Type: The type of meter being used in the system
Vpv Start (V): Min PV Voltage (V) accepted by the inverter
CT Ratio: Current Transformer (CT) winding ratio (e.g. 1000:1, 2000:1, 3000:1)
Offgrid Output: Enabling this setting causes the inverter to provide backup power if the grid is lost
CT Direction Reversed: Enable when both CTs have been installed backwards
Seamless Switch: Must be enabled if users want the load to be transferred seamlessly to the inverter backup power
Charge Last: Will use solar power in the following order: 1. Loads, 2. Grid Export, 3. Battery Charging
RSD Disabler: Disables the Rapid Shut Down feature
AC Couple: Enables AC Coupling
No Battery: Can be enabled to use solar power to supply load when the grid fails or load-shedding happens. If users do not have a battery installed yet but still wish to have inverter backup power with only solar panels connected, this setting can be enabled.
Micro-grid: Should be set only when the generator is connected to the inverter's Grid terminal. With this option enabled, the inverter will use AC power to charge the battery and will not export any power through the Grid terminal if AC power is present at the inverter's Grid terminal.
Smart Load: When Smart load function is enabled, the GEN terminal will be reused to Smart Load, and the inverter will offer power to this load based on the setup values.
Run without Grid: Enable for a real off-grid system. The "No AC Connection" warning will be cleared when this is enabled.
PV Arc: Enables the inverter to detect when there is a PV input arc fault and protect the inverter
PV Arc Fault Clear: Clears the records of PV arc faults
Grid Type: Selects the type of grid such as split phase 240/120VAC, three phase 208/120VAC, single phase 240VAC, etc.…
Grid Freq: Enter the frequency of the grid in Hz
Grid Regulation: Selects the type of Grid Regulation
Recommended Time(S): The inverter will attempt to reconnect to the grid after abnormal situations (e.g. voltage/frequency fluctuations) after this amount of time has elapsed.
High Voltage (HV1-3) Voltage(V)/Time(S): Grid high voltage thresholds and dwell times for turning off grid input to the inverter
Low Voltage (LV1-3) Voltage(V)/Time(S): Grid low voltage thresholds and dwell times for turning off grid input to the inverter
High Freq (HF1-3) Freq(Hz)/Time(S): Grid high frequency thresholds and dwell times for turning off grid input to the inverter
Low Freq (LF1-3) Freq(Hz)/Time(S): Grid low frequency thresholds and dwell times for turning off grid input to the inverter

EG4 ELECTRONICS

Advanced

Battery Type: The type of batteries being used (None, Lithium or Lead-Acid)
Lithium Brand: The brand of lithium battery being used
Lead Capacity (Ah): The capacity (Ah) of the lead-acid battery being used
Export to Grid: Enables the ability to export power to the grid
Max Export to Grid (kW): Sets the max power (kW) that can be exported to the grid
Zero Export: Enables zero export preventing any power from being exported to the grid

Parallel System:

Role: setting of the parallel system. It is set to '1 phase master' by default. In a parallel system, only one inverter is allowed to be set as Master and the others are set as Slaves.
Phase: The phase code setting of the load output. The system will automatically detect the phase sequence of the inverter (consistent with the phase sequence of the connected grid mains) and display it on the inverter after it is connected to the grid.

Parallel Battery:

Share Battery: If all inverters are connected to the same battery bank when configured as a parallel system, then this setting must be enabled. If the inverters are configured as a parallel system and are connected to independent battery banks, then this setting must be disabled.
Auto Detect Phase: Used to reset the grid phase sequence detected by the inverter

Debug

FAQs: Frequently Asked Questions

Device Info.

Time: Local time per format: yyyy-mm-dd hr:min:sec
Backlight Time (S): The amount of time in seconds that the LCD backlight will stay on before dimming automatically
Model: Software model data (Manufacturer data)
Serial Number: Serial number of the inverter
Firmware Version: The current firmware version installed on the inverter
Build Version: The inverter build version
LCD Version: Version of the LCD Display
Image Version: Version of the LCD image
Icon Version: Version of the LCD icon