GC4K *Ver1.0*

Auto Start Genset Control & Protection Module for non-Electronic Engine

KUTAI ELECTRONICS INDUSTRY CO., LTD.
TEL : +886-7-8121771 FAX : +886-7-8121775 Website : www.kutai.com.tw
Headquarters : No.3, Lane 201, Chien Fu St., Chyan Jenn Dist., Kaohsiung 80664, TAIWAN

KUTAI

ISO 9001
ETC

TABLE OF CONTENTS

Section ***Page***

SECTION 1 : SAFETY PRECAUTIONS

SECTION 2 : OVERVIEW OF GCU-4K SYSTEM COMPONENTS

2.1 Package Contents....5
2.2 Overview of GC4K-D07 External Features (Figure 1)....6
2.3 GC4K External Features (Figure 2)....7

SECTION 3 : PRODUCT INSTALLATION

3.1 Panel Cut-Out And Installation Drawing....8
3.1.1 GC4K-D07....8
3.1.2 GC4K Controller Dimensions....8
3.1.3 Wiring Installation Precautions....9

3.2 Controller Connections With Display Unit....9
3.2.1 USB Connector Attachment Instructions....10
3.2.2 RJ45 Connector Attachment Instructions....10

3.3 Generator Connections With GC4K Controller....11
3.3.1 GC4K Connection Terminal Numbers and Locations Drawing....11
3.3.2 GC4K Connection Terminals, Communication Ports, and Connectors....12
3.3.3 Recommended Wiring Diagram....14

SECTION 4 : SYSTEM PARAMETERS SETTINGS

4.1 Explanation Of Terms and Icons Used With GC4K....15
4.2 Precautions....15
4.3 Open Owner Functions Screen....16
4.3.1 Onsite and Remote Parameters Setting....16

4.4 Language Setting....16
4.5 System Settings....16
4.5.1 Voltage Parameters Settings....17
4.5.1.1 Phase....17
4.5.1.2 Nominal Voltage Setting....17
4.5.1.3 Over Voltage Protection Setting....18
4.5.1.4 Under Voltage Protection Settings....18
4.5.1.5 Voltage Readings Calibration....18

4.5.2 Current Parameters Settings....18
4.5.2.1 Current Transformer (CT) Setting....18
4.5.2.2 Over Current Protection Settings....18
4.5.2.3 Current Readings Calibration....19

4.5.3 Frequency Parameters Settings....19
4.5.3.1 Nominal Frequency Setting....19
4.5.3.2 Over Speed Protection Settings....19
4.5.3.3 Under Speed Protection Settings....19
4.5.3.4 Magnetic Pick-up Unit (MPU) Settings....19

4.5.4 Fuel Level Parameter Setting 19
4.5.4.1 Fuel Level Sender Settings 19
4.5.4.2 Low Fuel Level Response Settings 20

4.5.5 Over Temperature Protection Settings 20
4.5.5.1 Over Temperature Settings 20
4.5.5.2 Temperature Reading Calibration 20
4.5.5.3 Temperature Sender Loss Sensing 20

4.5.6 Oil Pressure Setting 20
4.5.6.1 Low Oil Pressure Setting 20
4.5.6.2 Oil Pressure Sender Loss Sensing 20

4.5.7 User Defined Input and Output Settings 21
4.5.7.1 User Defined Input-A and User Defined Input-B Settings 21
4.5.7.2 User Defined Output-A Setting 21
4.5.7.3 User Defined Output-B Setting 21

4.5.8 Engine Start / Stop Setting 21
4.5.8.1 Engine Start Settings 21
4.5.8.2 Preheat Settings 21
4.5.8.3 Engine Stop Settings 22
4.5.8.4 Engine Idle Timer 22
4.5.8.5 Engine Cool Down Timer 22
4.5.8.6 MPU Confirms Engine Started 22
4.5.8.7 Oil Pressure Value Confirms Engine Started 22

4.5.9 Battery and Charge Alternator Settings 22
4.5.9.1 Battery Voltage Warning Setting 22
4.5.9.2 Charge Alternator Protection Settings 22

4.5.10 Location Service 22
4.5.11 Service Maintenance Reminder 23

4.5.12 Voice and Audio Alarm Settings 23
4.5.12.1 Audio Alarm Setting 23
4.5.12.2 Voice Warning Setting 23
4.5.12.3 User Recorded Engine Start Voice Warning 24
4.5.12.3.1 Record Engine Start Voice Warning 24
4.5.12.3.2 Engine Start Voice Warning Download Procedure 24

4.5.13 Communication Module Settings 25
4.5.14 Factory Setting Recovery 25
4.5.15 Security Alert Settings 25
4.5.16 Erase Event Log, Reset Running Hours or KWH Meter to Zero 25

4.6 About This Unit 25
4.7 Wifi Settings 25
4.8 Time and Date Settings 26

4.9 Replicate Settings 26
4.9.1 Settings Transfer Procedure on Master GC4K Device 26
4.9.2 Operations on Receiving Devices 26

SECTION 5 : UNIT OPERATIONAL TESTS
5.1 Mode Selector 27

5.2 Display Pages 28
5.2.1 Home Page 28
5.2.2 Electrical Power Readings 29
5.2.3 Event Log Page 29
5.2.4 Voltage Level / Current Level Recorder Screen 30
5.2.5 Location Map Page 30

5.3 Initial Operation (MANU and AUTO) 31
5.3.1 Items to Check 31
5.3.2 Start Procedure 31
5.3.3 Shut Down Procedure 31
5.3.4 AUTO Mode Initial Operation Test 31

SECTION 6 : REMOTE OPERATION
6.1 Overview of Remote Monitoring and Control Functions 32
6.1.1 Three Options for GC4K Internet Connection 32

6.2 Controller Connection to Kutai Server 33
6.2.1 Wi-Fi Connection Settings 33
6.2.2 Dynamic IP Connection (Ethernet) 33
6.2.3 3G / 4G Wireless Router Installatio 34

6.3 Mobile Connection to GCU-4K 34
6.3.1 GenOnCall® APP Download 35

6.3.2 Create a Personal Account on The Kutai Server 35
6.3.2.1 Create an Account on The Kutai Website 35
6.3.2.2 Create an Account Using The iOS GenOnCall® APP 35
6.3.2.3 Create an Account Using The Android GenOnCall® APP 35

6.3.3 Bind The Controller and Edit Operator and Viewers 36
6.3.4 Establishing Connection With a Controller 37
6.3.5 Unbinding a Device 37

6.3.6 GenOnCall® Remote : Log-in To Advanced Settings Screen 38
6.3.6.1 Push Notification Editor 38
6.3.6.2 Overview of Settings Options 38
6.3.6.3 Overview of Profile Options 38

SECTION 7 : GCU-4K INTRODUCTION
7.1 Product Overview 39
7.2 Features 39
7.3 Display Parameter 39
7.4 Monitoring and Protections 39
7.5 Electrical Characteristics 39

SECTION 8 : SOFTWARE AND FIRMWARE UPDATES
SECTION 9 : OPTIONAL ACCESSORIES

SECTION 1 : SAFETY PRECAUTIONS

NOTICE	**An essential operation required to ensure that a procedure is done correctly.**
⚠ CAUTION	**A procedure or operation which must be followed exactly or could result in permanent damage to equipment.**
⚠WARNING	**A procedure or operation that could result in injury to personnel or death if not done correctly.**

This manual contains all information necessary for installation, wiring, operation and maintenance of the Kutai GC4K Auto Start Genset Control & Protection Module. This manual should be read carefully before operating the system.

⚠WARNING

All installation, wiring, and reference settings of the GC4K Control & Protection Module should only be carried out by qualified technical personnel. Improper installation, wiring, or input of reference settings could lead to injury to personnel and/or damage to equipment.

SECTION 2 : OVERVIEW OF GCU-4K SYSTEM COMPONENTS

The shipping package should be opened immediately after it is received to check whether or not any collisions have occurred during transport causing external damage and also to confirm that all standard accessories are included in accordance with list 2.1. If there is any external damage apparent or any parts are missing then immediately contact the company you bought the unit from.

2.1 Package Contents

GC4K-D07 Operator display x 1	DB9 cable (1 meter) x 1	A-type USB cable (1 meter) x 1
GC4K control unit x 1	OPS-02 Oil Pressure Sender x 1	TS-03 Temperature Sender x 1
User Manual DVD x 1 disc Display Unit Attachment screws x 1 bag	OPS-02 cable (2.5 meters) x 1	TS-03 cable (2.5 meters) x 1

2.2 Overview of GC4K-D07 External Features (Figure 1)

Front View

Multi-touch Color Screen LCD display

Audio / Voice Warning speaker

Emergency Stop Button

Mode Selector

Rear View

Forced Shutdown Buttons

USB port

Waterproofing Gasket

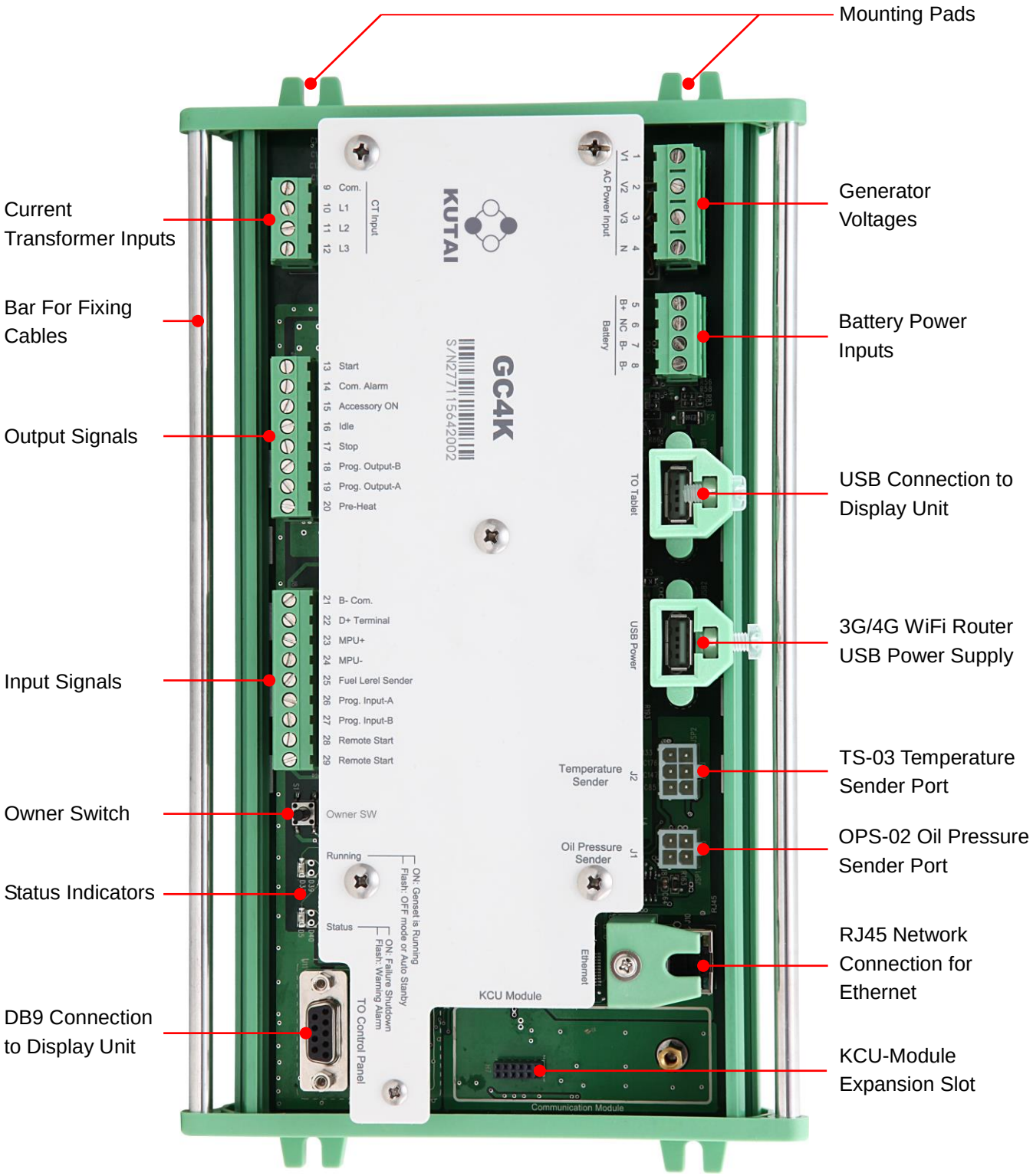
DB9 port

Attachment Holes x 4

NOTICE

The Forced Shutdown buttons should only be used if the display unit is not operating normally or the unit cannot be operated by the touch screen. To execute forced shutdown press both A and B buttons at the same time and hold for 15 seconds until the screen turns OFF. Then press the A button to restart the screen display. The system will the automatically return to normal operation.

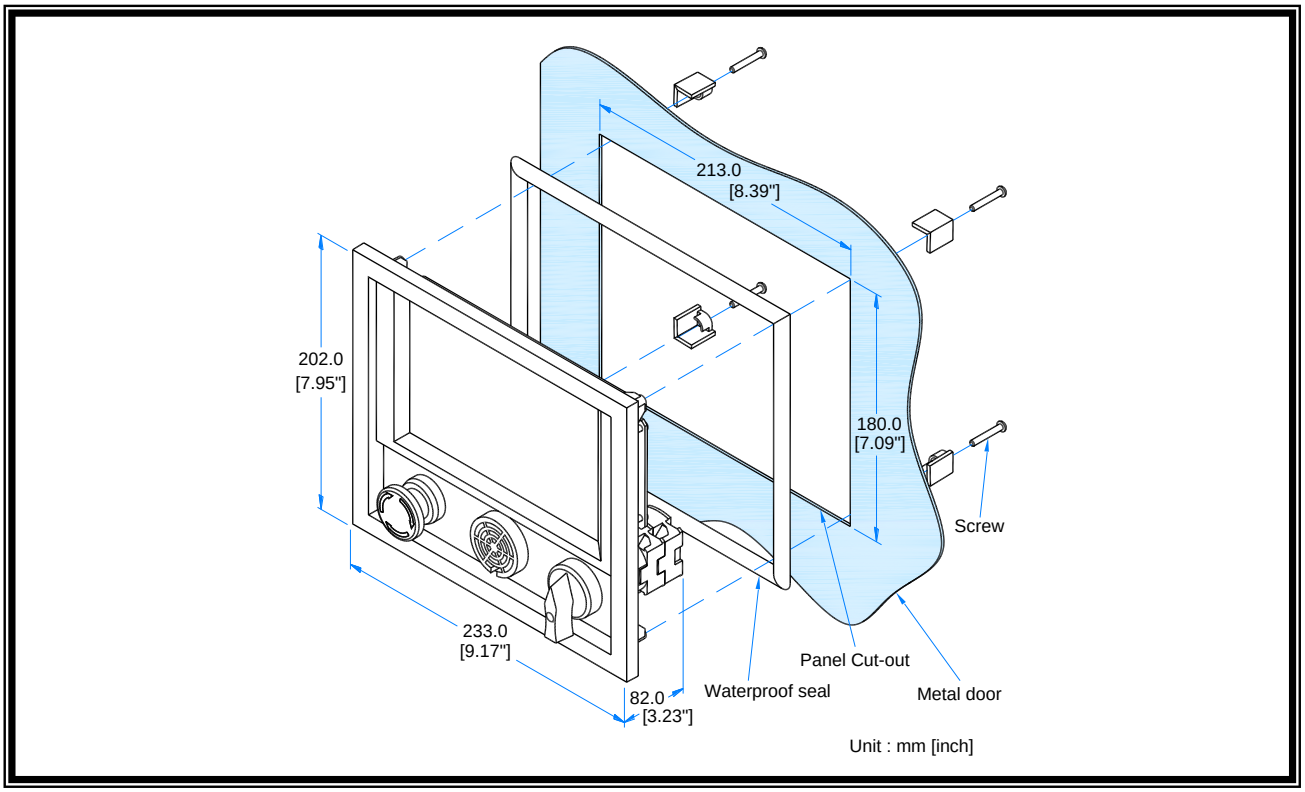
2.3 GC4K External Features (Figure 2)



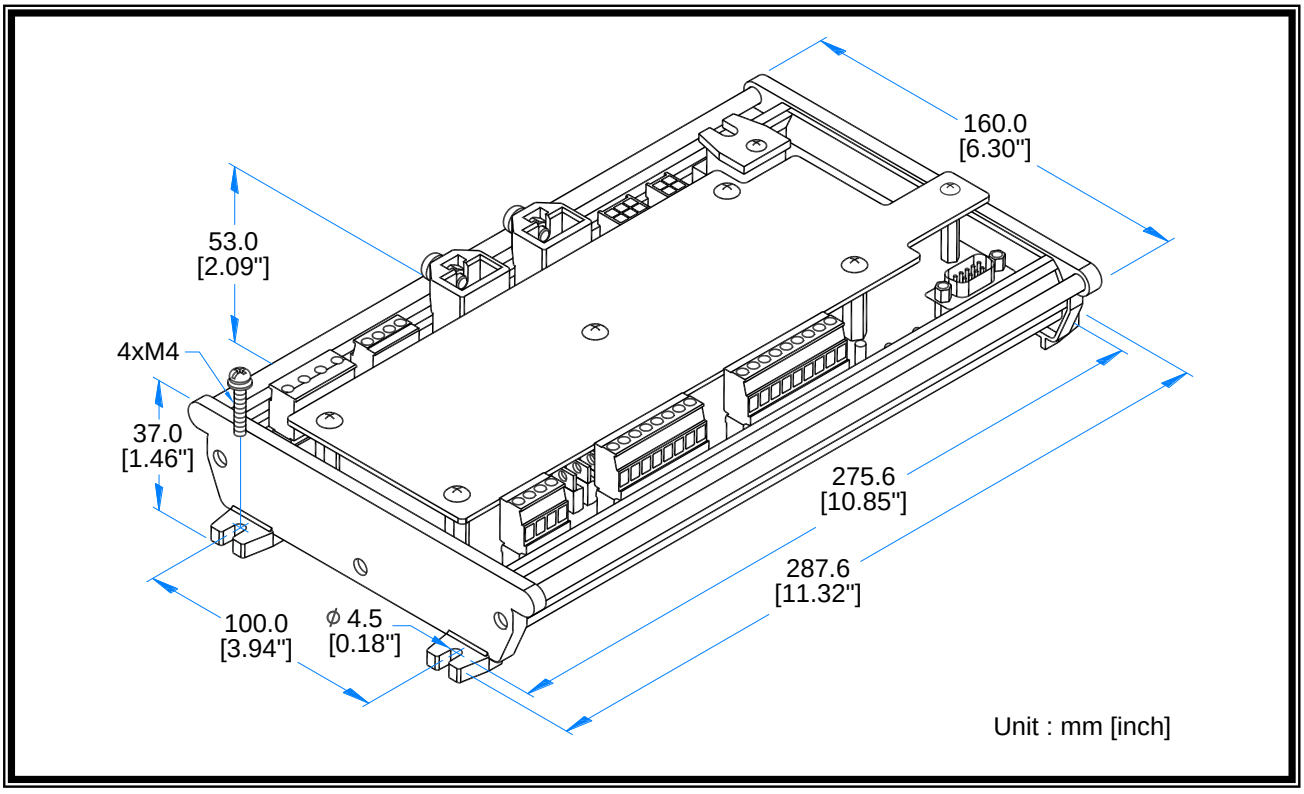
SECTION 3 : PRODUCT INSTALLATION

3.1 Panel Cut-Out and Installation Drawing

3.1.1 GC4K-D07 (Figure 3)

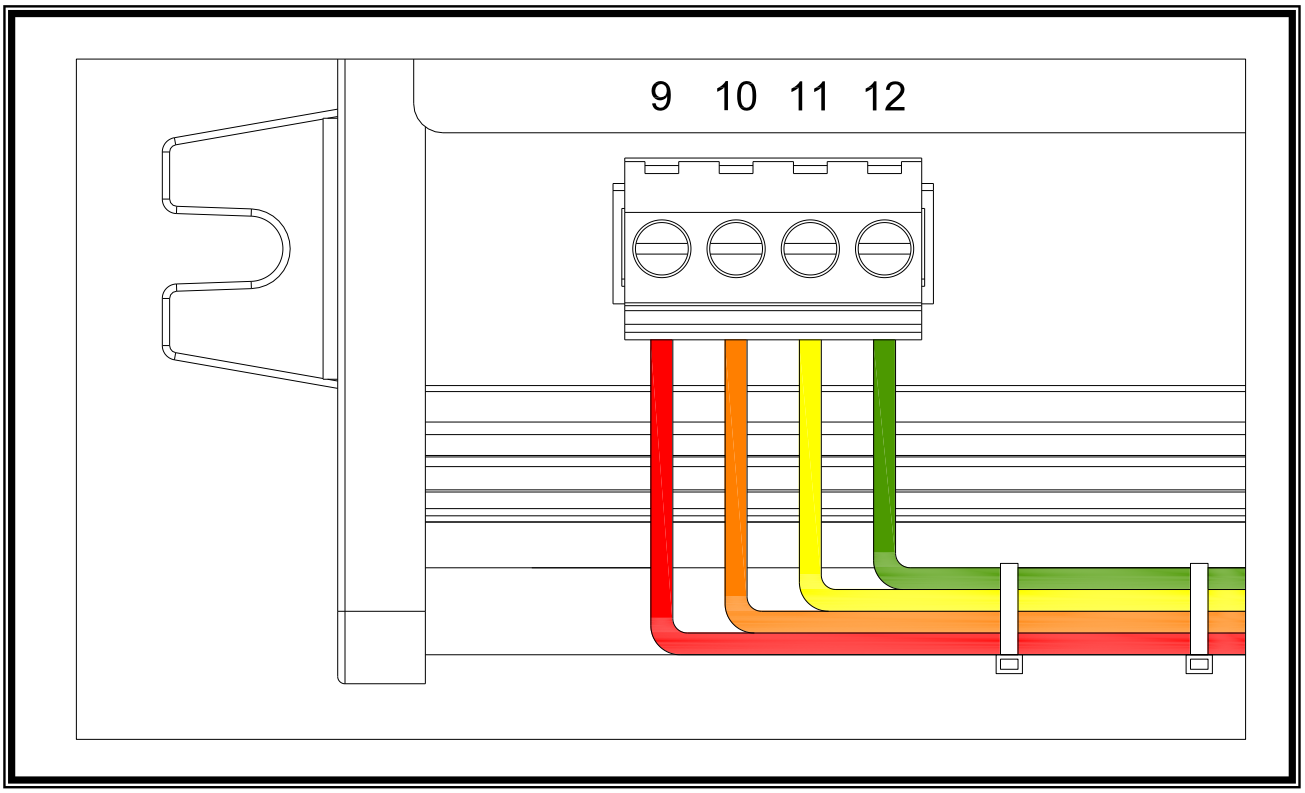


3.1.2 GC4K Controller Dimensions (Figure 4)

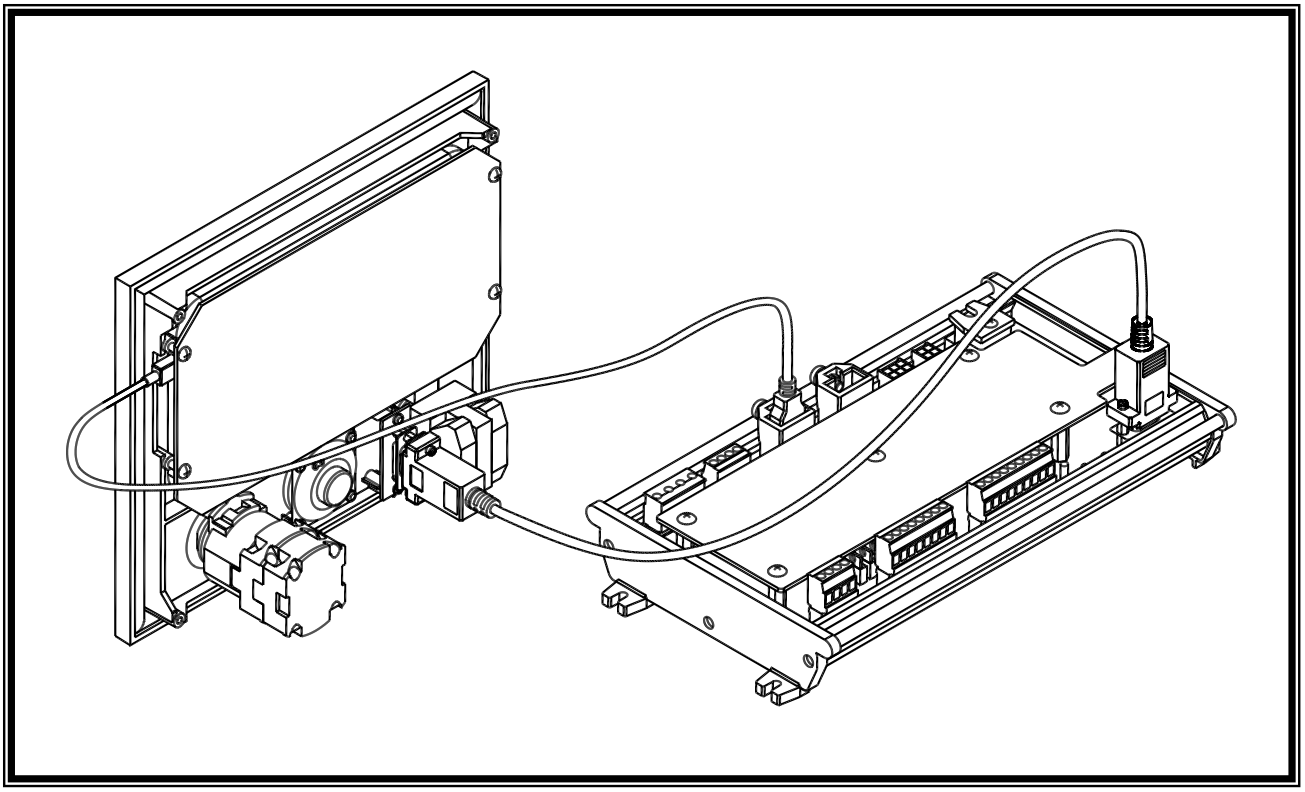


3.1.3 Wiring Installation Precautions (Figure 5)

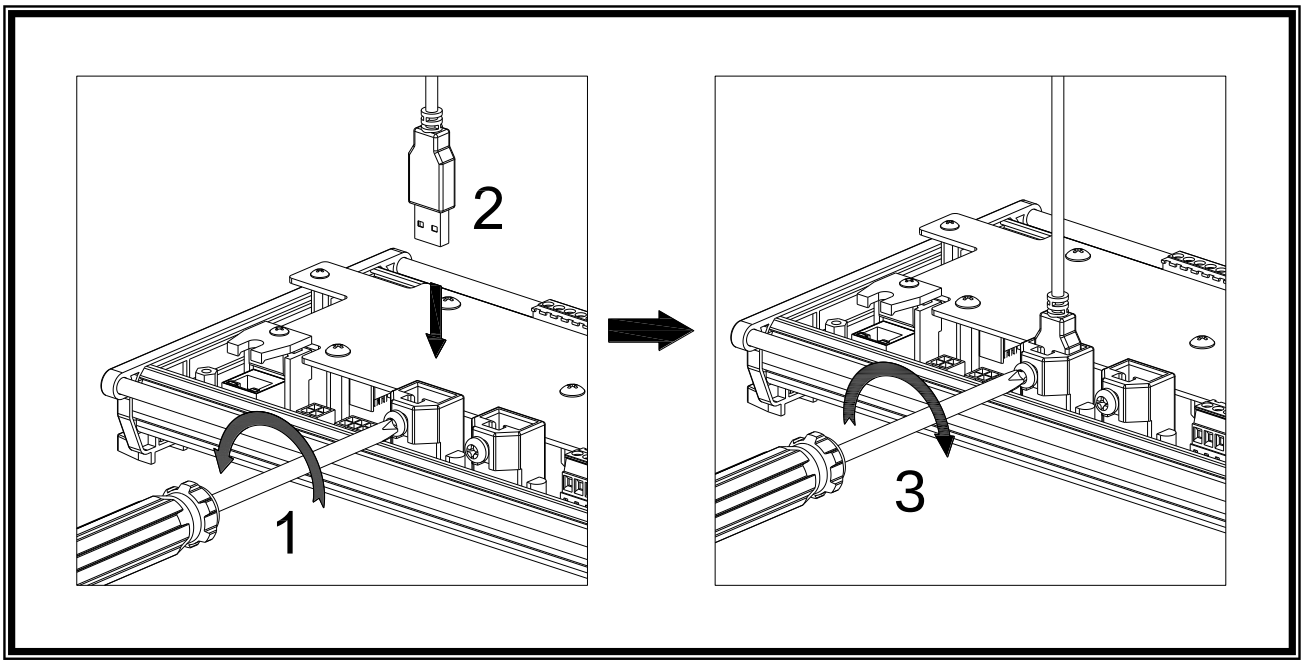
The GC4K controller has cable fixing bars on both sides. When installation of wiring is completed all wiring connected to the controller should be securely fixed to these bars to reduce the possibility of bad connections caused by vibration.



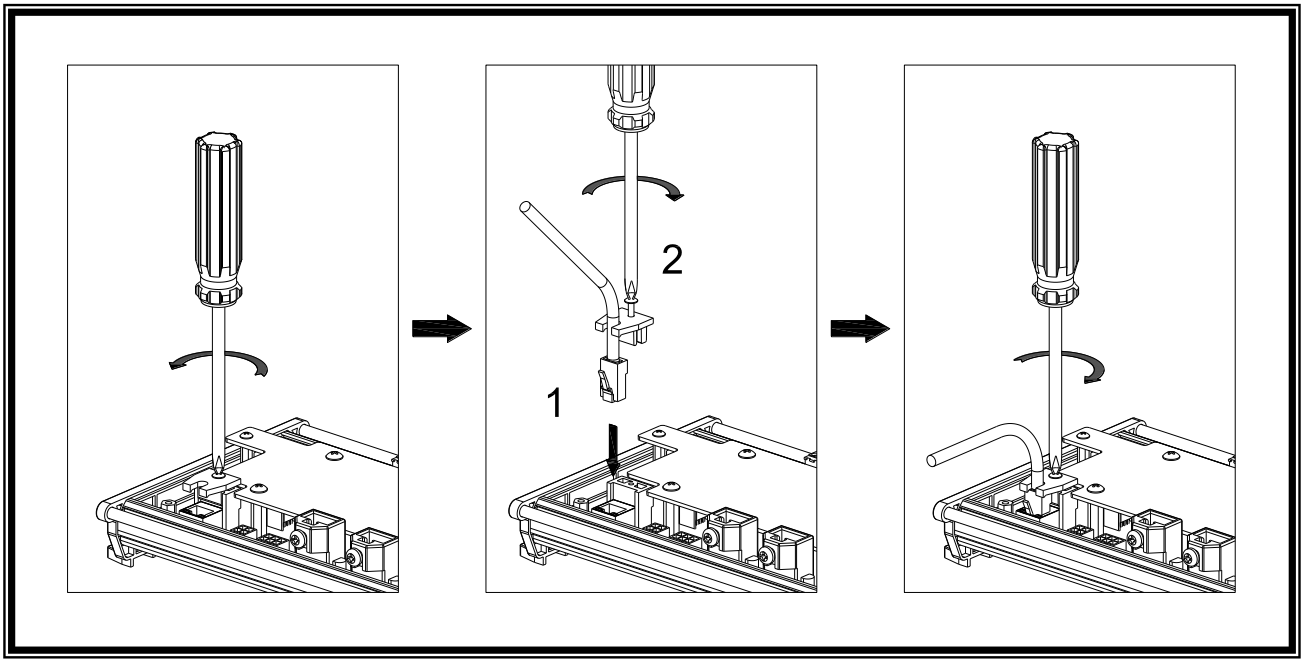
3.2 Controller Connections With Display Unit (Figure 6)



3.2.1 USB Connector Attachment Instructions (Figure 7)



3.2.2 RJ45 Connector Attachment Instructions (Figure 8)



⚠ CAUTION

1. **If the USB or RJ45 connectors are not attached correctly it could lead to loosening of connections from vibration after extended operation of the genset.**
2. **A loose USB connection between the GC4K controller and the GC4K-D07 display panel could lead to the unit not functioning properly.**
3. **When RJ45 is used a loose connection could lead to loss of remote monitoring and control functions through Ethernet.**

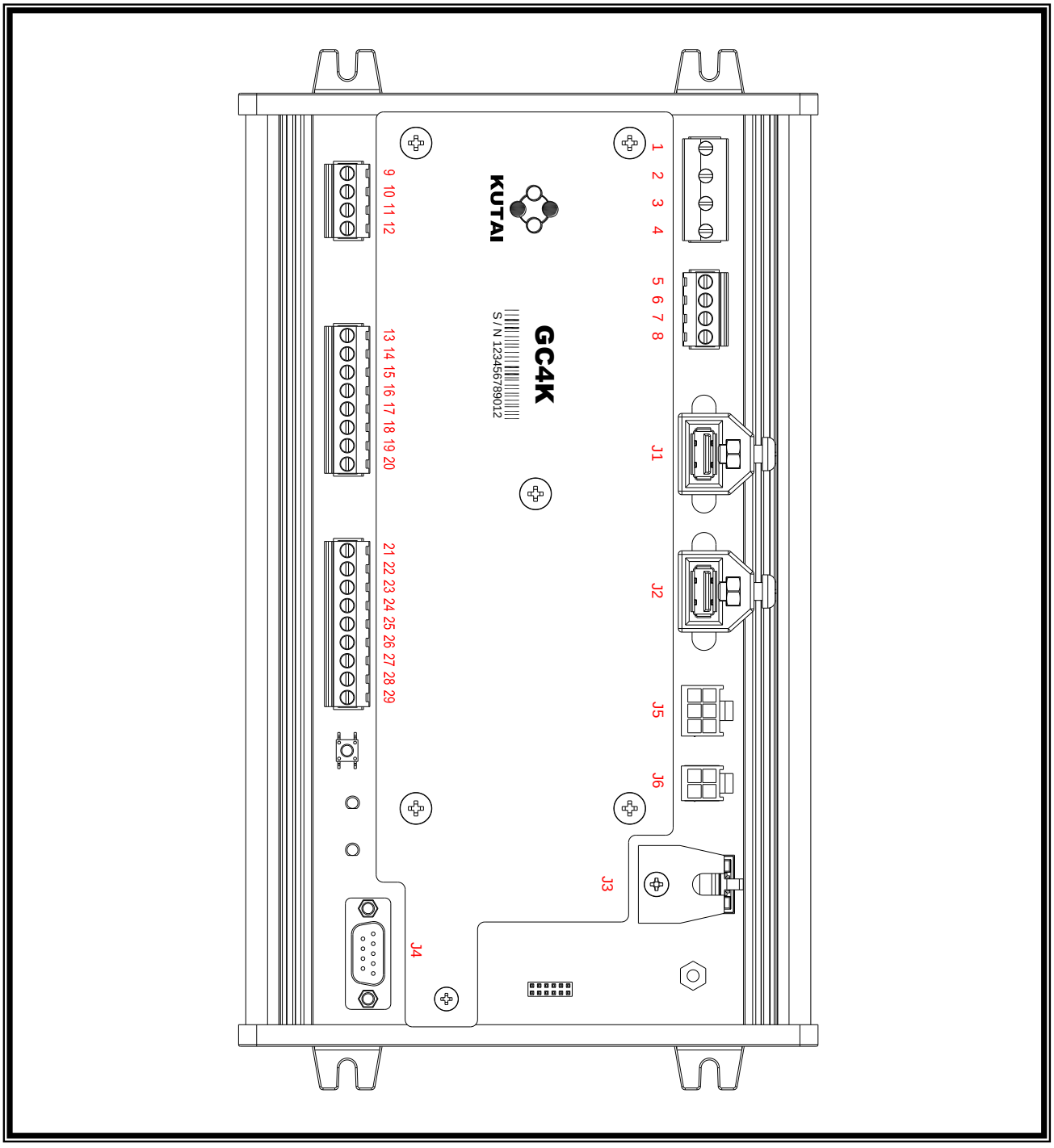
3.3 Generator Connections With GC4K Controller

⚠WARNING

Connections should be made in the order listed below :

1. **Complete all wiring connections except battery power.**
2. **Confirm that all wiring is correct.**
3. **Place Mode Selector to OFF.**
4. **Connect to Battery Power.**

3.3.1 GC4K Connection Terminal Numbers and Locations Drawing (Figure 9)

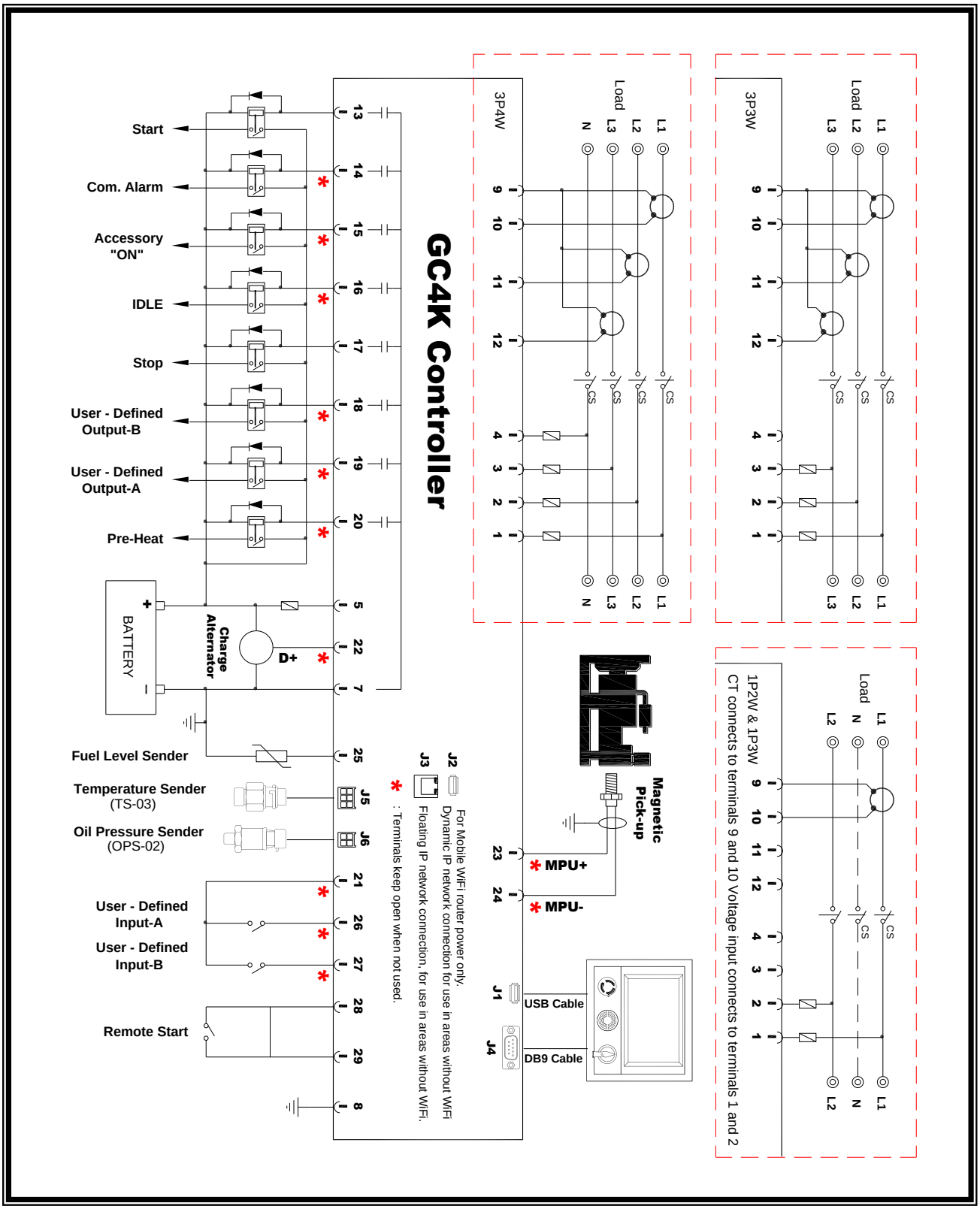


3.3.2 GC4K Connection Terminals, Communication Ports, and Connectors

PIN No.	Connection	Recommended wire size	Description
1	AC Power Input (V1)	AWG 18	Connect to AC power source L1 phase
2	AC Power Input (V2)	AWG 18	Connect to AC power source L2 phase
3	AC Power Input (V3)	AWG 18	Connect to AC power source L3 phase
4	AC Power Input (N)	AWG 18	Connect to AC power source N phase
5	Battery Power Input (B+)	AWG 12	Connect to positive (+) terminal on battery
6	NC		No connection
7	Battery Power Input (B-)	AWG 12	Connect to negative (–) terminal on battery
8	Battery Power Input (B-)	AWG 12	Connect to chassis grounding (–)
9	CT secondary common input	AWG 13	Generator current transformer common connection and CT earth connection
10	CT secondary input (L1)	AWG 13	Generator L1 current transformer connection
11	CT secondary input (L2)	AWG 13	Generator L2 current transformer connection
12	CT secondary input (L3)	AWG 13	Generator L3 current transformer connection
13	Start Signal output	AWG 13	Connect to Starter Auxiliary Contactor (maximum output 10 Amps)
14	Fault Alarm Signal output	AWG 18	Connect to Fault Alarm Indicator LED (maximum output 2.5 Amp)
15	Accessory ON / control panel illumination output	AWG 18	Connect to terminal using Accessory ON output (maximum output 2.5 Amp)
16	Engine Idle Control Output	AWG 18	Connect to engine idle controller (maximum output 2.5 Amp)
17	Engine Stop Signal Output	AWG 13	Connect to engine stop auxiliary contactor (maximum output 10 Amp)
18	User-defined Output-B	AWG 18	Connect to any device for fault alarm indication or protection action (maximum output 2.5 Amp)
19	User-defined Output-A	AWG 18	Connect to any device for protection action or block heater relay (maximum output 2.5 Amp)
20	Preheat Signal Output	AWG 18	Connect to engine glow plug auxiliary relay (maximum output 2.5 Amp)
21	User-defined input common	AWG 18	Connect to User-defined input common
22	D+ terminal output	AWG 18	Connect to charge alternator D+ terminal
23	MPU input	AWG 20	Connect to MPU (use shielded, twisted pair)
24	MPU input	AWG 20	Connect to MPU (use shielded, twisted pair)
25	D+ terminal output	AWG 18	Connect to charge alternator D+ terminal
26	User-defined Input-A	AWG 18	Input must be a “dry” contact type
27	User-defined Input-B	AWG 18	Input must be a “dry” contact type
28	Remote Start Signal Input	AWG 18	Connect to start signal from Automatic Transfer Switch or to a remote start switch

PIN No.	Connection	Recommended Wire Size	Description
29	Remote Start Signal Input	AWG 18	Connect to start signal from Automatic Transfer Switch or to a remote start switch
J1	Display screen USB port		Connect to GC4K-D07 USB port
J2	WiFi router power output		Connect to WiFi router power input (USB cable)
J3	Ethernet jack		Connect to Ethernet cable (RJ45)
J4	Connector for control signals		Connect to GC4K-D07 (DB9)
J5	Temperature Sender port		Connect to Temperature Sender
J6	Oil Pressure Sender port		Connect to Oil Pressure Sender

3.3.3 Recommended Wiring Diagram



SECTION 4 : SYSTEM PARAMETERS SETTINGS

4.1 Explanation of Terms and Icons Used With GC4K

Special Term	Explanation
Owner	This is the highest authority. The owner of the unit and has the following authorities : 1. Can monitor all parameters of the unit. 2. Can delete the event log or reset running hours. 3. Can edit operator and viewer status and assign a generator name. 4. Has the original operator authority with ability to change parameter settings. If the owner assigns operator authority to another account then this authority will automically be removed, however the owner account will still possess viewer monitoring rights and the authority to take back or reassign operator authority to another account.
Operator	Remote operator authority with ability to change system settings, as well as view all operating parameters. A controller will allow only one operator connection.
Viewer	Authority to monitor all paramaters and operating status. The controller allows up to seven Viewer connections at one time.
Device Binded	All controllers to be remotely monitored must first be bound to an owner by executing the binding procedure, if this binding process is not completed then the Kutai remote server will not allow connection to the controller. (See Section 6.3.3)
Owner Switch	Whoever presses the “owner switch” will have owner authority for the unit. (See Figure 2)
Replicate Settings	When it is necessary to set system parameters for a group of controllers, one controller can be chosen as the Master. The replicate settings will dump the settings of the “Master controller” to any controllers connected on the same WiFi domain. (Refer to 4.5.9)
Onsite	Refers to equipment installed on the genset, that is GC4K + GC4K-D07
Remote	Refers to an operator or viewer using a mobile device with GenOnCall® Remote APP
	This symbol at the beginning of a section indicates an onsite operation
	This symbol at the beginning of a section indicates a remote device operation
	This symbol at the beginning of a section indicates an owner operation
	This symbol indicates the “owner” of a controller (See above)
Setting Permission	Italic font indicates text displayed on the screen

4.2 Precautions

⚠ CAUTION

All settings highlighted in yellow must be confirmed before the genset is started for the first time.
Any improper settings could lead to permanent damage to the unit.

4.3 Open Owner Functions Screen

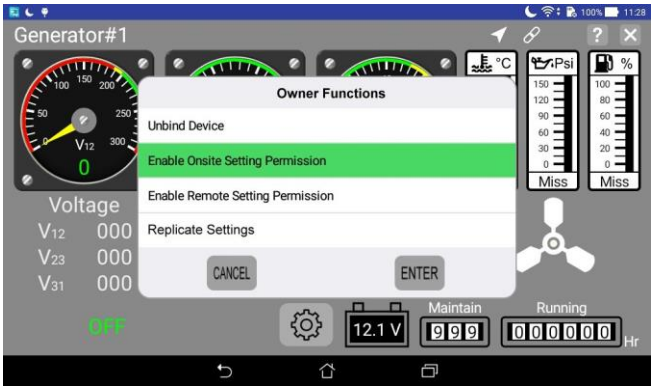
With Mode selector in OFF position pressing the Owner Switch on the controller will display the following options.

- Unbind current Owner from the controller (Refer to Section 6.3.5)
- Enable Onsite Setting of parameters (Refer to Section 4.3.1)
- Enable Remote Setting of parameters (Refer to Section 4.3.1)
- Carry out replicate settings (Refer to Section 4.5.9)

4.3.1 Onsite and Remote Parameters Setting

Whether settings are made Onsite or by the Remote APP, the Owner SW must be pressed for 2 seconds each time to open the Owner Functions screen. The controller will open a 2-hour period for the user to make changes to settings.

Turn the Mode Selector to OFF ► Press the Owner SW on the controller ► Click on *Enable Onsite Setting Permission* or *Enable Remote Setting Permission* ► Press ENTER to enable Onsite or Remote Setting Parameters.



Enable Onsite Setting Permission

4.4 Language Setting

Press ⚙ ► press *Language / Idioma / 語言* ► click on English, Spanish, or Traditional Chinese.

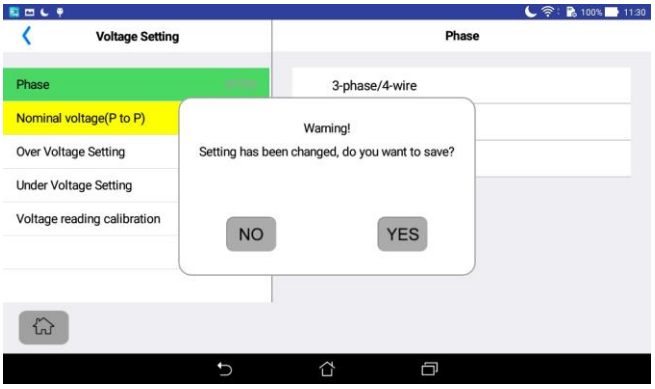
4.5 System Settings

System settings can only be made with the controller in the OFF mode and the setting permission opened otherwise setting selection options will turn the color grey to notify the user that system settings cannot be changed. However, the user can still enter the settings screen to view all settings.

4.5.1 Voltage Parameters Settings

4.5.1.1 Phase

Press ⚙ ► Press *System Setting* ► Press *Voltage Setting* ► Press *Phase* ► Press correct option.



After setting is complete, pressing "<" to return the previous page or pressing ⌂ to return to the Home Page, or choosing any another Setting option, a window will pop up on the screen asking if you want to save the setting. Press YES to save.

Save Change To Settings Has Failed

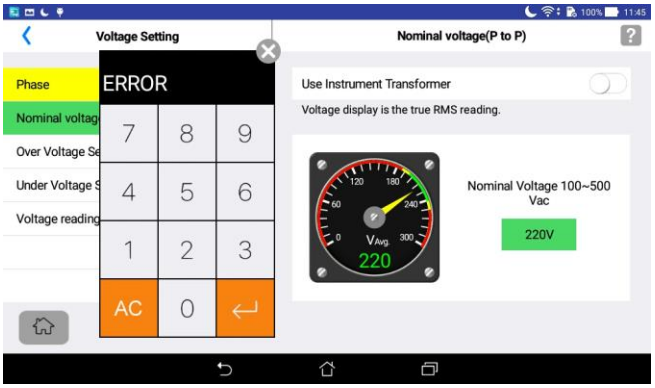
Press RETRY to execute save setting again.

Press CANCEL to abandon new setting value. Original setting will not be changed.

4.5.1.2 Nominal Voltage Setting

Press ⚙ ► *Press System Setting* ► Press *Voltage Setting* ► Press *Nominal Voltage (P to P)*

1. If no instrument transformer is used Press the setting box ► Use the keypad to input the voltage ► Press ↵ to enter.
2. If voltage is > 500 Vac it will be necessary to use an instrument transformer. Turn ON *Use Instrument Transformer* ► Use the keypad to input the transformer primary and secondary voltages.



ERROR Warning

For all settings, if an entered value exceeds that allowed range then an "**ERROR**" warning will appear on the screen. Press AC to clear.

4.5.1.3 Over Voltage Protection Setting

Press ⚙ ► Press *System Setting* ► Press *Voltage Setting* ► Press *Over Voltage Setting* ► Turn ON *Over Voltage Warning* and *Over Voltage Shutdown* ► Click on setting boxes ► Use the keypad to input the Over Voltage Protection values and Permitted Delay time ► Press ↵ to enter.

4.5.1.4 Under Voltage Protection Settings

Press ⚙ ► Press *System Setting* ► Press *Voltage Setting* ► Press *Under Voltage Setting* ► Turn ON *Under Voltage Warning* and *Under Voltage Shutdown* ► Click on setting boxes ► Use the keypad to input the Under Voltage Protection values and Permitted Delay time ► Press ↵ to enter.

4.5.1.5 Voltage Readings Calibration

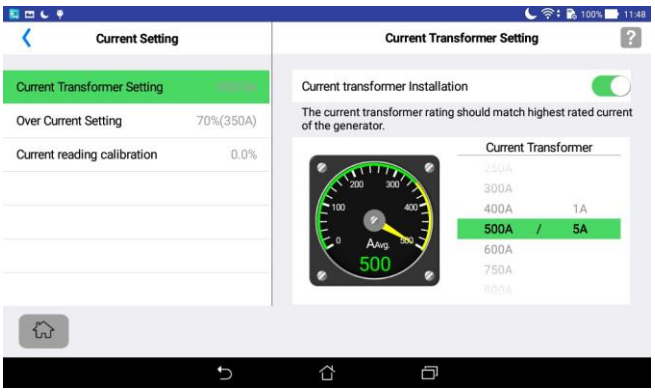
Displayed voltages are true RMS values. If an averaging voltmeter is used to carry out calibration it could possibly cause displayed values to be inaccurate, causing Over Voltage and Under Voltage protections to malfunction or become ineffective.

Press ⚙ ► Press *System Setting* ► Press *Voltage Setting* ► Press *Voltage Reading Calibration* ► Scroll to the desired value in the setting box.

4.5.2 Current Parameters Settings

4.5.2.1 Current Transformer (CT) Setting

Press ⚙ ► Press *System Setting* ► Press *Current Setting* ► Press *Current Transformer Setting* ► Turn ON *Use Current Transformer* ► Press the setting boxes ► Scroll to the primary and secondary current values for the current transformer used.



Current Transformer Setting screen

4.5.2.2 Over Current Protection Settings

Press ⚙ ► Press *System Setting* ► Press *Current Setting* ► Press *Over Current Setting* ► Turn ON *Over Current Warning* and *Over Current Shutdown* ► Press the setting boxes ► Use the keypad to input the Over Current Protection values and Permitted Delay time ► Press ↵ to enter.

4.5.2.3 Current Readings Calibration

Displayed currents are true RMS values. If an averaging ammeter is used to carry out calibration it could possibly cause displayed values to be inaccurate, causing over current protection to malfunction or become ineffective.

Press ⚙ ► Press *System Setting* ► Press *Current Setting* ► Press *Current Reading Calibration* ► Scroll to the desired value in the setting box.

4.5.3 Frequency Parameters Settings

4.5.3.1 Nominal Frequency Setting

Press ⚙ ► Press *System Setting* ► Press *Frequency Setting* ► Press *Nominal Frequency* ► Select 50 Hz or 60 Hz.

4.5.3.2 Over Speed Protection Settings

Press ⚙ ► Press *System Setting* ► Press *Frequency Setting* ► Press *Over Speed Setting* ► Turn ON *Over Speed Warning* and *Over Speed Shutdown* ► Press the setting box ► Use the keypad to input the Over Speed Protection and Permitted Delay time values ► Press ↵ to enter.

⚠ CAUTION

For safety purposes the Over Speed Warning and Over Speed Shutdown cannot both be turned OFF at the same time. If an attempt to turn OFF both at the same time a warning will appear on the controller screen.

4.5.3.3 Under Speed Protection Settings

Press ⚙ ► Press *System Setting* ► Press *Frequency Setting* ► Press *Under Speed Setting* ►Turn ON *Under Speed Warning* and *Under Speed Shutdown* ► Press setting boxes ► Use the keypad to input the Under Speed Protection values and Permitted Delay time ► Press ↵ to enter the values.

4.5.3.4 Magnetic Pick-up (MPU) Settings

Press ⚙ ► Press *System Setting* ► Press *Frequency Setting* ► Press *Magnetic Pickup Setting* ►Turn ON *Use Magnetic Pickup* ► Press *MPU Failure Warning* or *MPU Failure Shutdown* ► Press setting boxes ► Use the keypad to input the MPU Failure Permitted Delay time ► Press ↵ to enter the values.

4.5.4 Fuel Level Parameter Setting

4.5.4.1 Fuel Level Sender Settings

Press ⚙ ► Press *System Setting* ► Press *Fuel Level Setting* ► Press *Fuel Level Sender* ► Select one of the following.

1. None.
2. **Fuel Level Sender** ► Press setting box ► Use the keypad to input the *Full position* and *Empty position* resistance values ► Press ↵ to enter.
3. **Fuel Level Switch** ► Press *Low Fuel Level to Open* or Low Fuel Level to Close.

4.5.4.2 Low Fuel Level Response Settings

Press ⚙ ► Press *System Setting* ► Press *Fuel Level Setting* ► Press *Low Fuel Level Response*.

1. Using a Fuel Level Sender turn ON *Low Fuel Level Warning* or *Low Fuel Level Shutdown* ► Press setting boxes ► Use the keypad to input the Low Fuel Level Response activation values and Permitted Delay time ► Press ↵ to enter.
2. Using a Fuel Level Switch Press Low Fuel Level Response : *Warning* or *Shutdown* ► Press setting boxes ► Use the keypad to input the Low Fuel Level Response Permitted Delay time ► Press ↵ to enter.

4.5.5 Over Temperature Protection Settings

4.5.5.1 Over Temperature Settings

Press ⚙ ► Press *System Setting* ► Press *Temperature Setting* ► Press *Over Temperature Setting* ► Turn ON *Over Temperature Warning* or *Over Temperature Shutdown* ► Press setting boxes ► Use the keypad to input Over Temperature Protection values and Permitted Delay time ► Press ↵ to enter.

⚠ CAUTION

Over Temperature Warning and Over Temperature Shutdown cannot both be turned OFF at the same time. If an attempt is made to turn OFF both at the same time a warning will appear on the screen.

4.5.5.2 Temperature Reading Calibration

Press ⚙ ► Press *System Setting* ► Press *Temperature Setting* ► Press *Temperature Reading Calibration* ► In the setting box to scroll to desired value.

4.5.5.3 Temperature Sender Loss Sensing

Press ⚙ ► Press *System Setting* ► Press *Temperature Setting* ► Press *Temperature Sender Loss Sensing* ► Press *Warning* or *Shutdown* ► Press setting boxes ► Use the keypad to input Permitted Delay time ► Press ↵ to enter the value.

4.5.6 Oil Pressure Setting

4.5.6.1 Low Oil Pressure Setting

Press ⚙ ► Press *System Setting* ► Press *Oil Pressure Setting* ► Press *Low Oil Pressure Setting* ► Turn ON *Low Oil Pressure Warning* and *Low Oil Pressure Shutdown* ► Press setting boxes ► Use the keypad to input the Low Oil Protection values and Permitted Delay time ► Press ↵ to enter the values.

⚠ CAUTION

Low Oil Pressure Warning and Shutdown cannot both be OFF at the same time. If an attempt is made to turn OFF both at the same time a warning will appear on the screen.

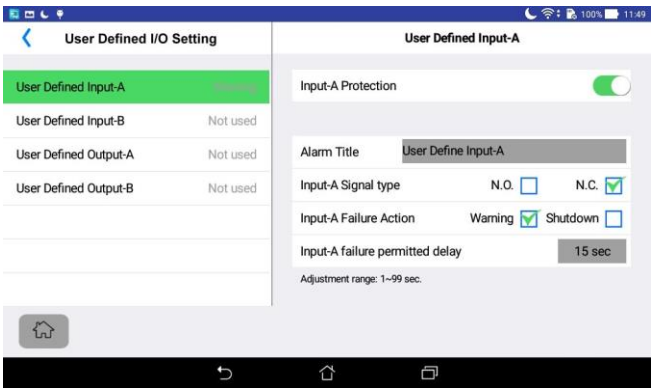
4.5.6.2 Oil Pressure Sender Loss Sensing

Press ⚙ ► Press *System Setting* ► Press *Oil Pressure Setting* ► Press *Oil Pressure Sender Loss Sensing* ► Press *Warning* or *Shutdown* ► Press setting boxes ► Use the keypad to input the Permitted Delay time ► Press ↵ to enter.

4.5.7 User Defined Input and Output Settings

4.5.7.1 User Defined Input-A and User Defined Input-B Settings

Press ⚙ ► Press *System Setting* ► Press *User Defined I/O Setting* ► Press *User Defined Input-A* ► Turn ON *Input-A* ► Press *Alarm Title* Box ► Use the keyboard to type in the name of the alarm and fill out all of the setting items ► Press ↵ to enter.



User Defined Input-A setting

NOTICE

When a water level switch or other protection device is used, either User Defined Input -A or -B can be used for the function.

4.5.7.2 User Defined Output-A Setting

Press ⚙ ► Press *System Setting* ► Press *User Defined I/O Setting* ► Press *User Defined Output-A* ► Select *Alarm Output* or *Block Heater control*.

1. **Alarm Output** ► Click the check box for Output fault type and protection action ☑.
2. **Block Heater Control** ► Press settings boxes ► Use the keypad to input Upper Temperature to turn OFF and Lower Temperature to turn ON ► Press ↵ to enter.

4.5.7.3 User Defined Output-B Setting

Press ⚙ ► Press *System Setting* ► Press *User Defined I/O Setting* ► Press *User Defined Output-B* ► Turn ON *Output-B Function* ► Click the check box for Output fault type and protection action ☑.

4.5.8 Engine Start / Stop Setting

4.5.8.1 Engine Start Settings

Press ⚙ ► Press *System Setting* ► Press *Engine Start / Stop Setting* ► Press *Engine Start Settings* ► Press setting boxes ► Use the keypad to input values for *Start Attempts, Cranking Timer*, *Interval Between Crankings* and *Genset Running Reminder* ► Press ↵ to enter the value ► Press *Genset Running Reminder* ► Press settings boxes ► Use the keypad to input Genset Running Reminder time ► Press ↵ to enter the value.

4.5.8.2 Preheat Settings

Press ⚙ ► Press *System Setting* ► Press *Engine Start / Stop Setting* ► Press *Pre-Heat* ► Turn ON *Pre-Heat* ► Press settings boxes ► Use the keypad to input values for *Preheat Timer* and *Bypass Preheat whenTemperature Over* ► Press ↵ to enter.

4.5.8.3 Engine Stop Settings

Press ► Press *System Setting* ► Press *Engine Start / Stop Setting* ►Press *Engine Stop Settings* ► Click on the engine stop method *Energized to stop* or *Energized to start* ► Press setting box ► Use the keypad to input value for Stop Timer (for Energized to stop systems only) ► Press ↵ to enter.

4.5.8.4 Engine Idle Timer

Press ► Press *System Setting* ► Press *Engine Start / Stop Setting* ►Press *Idle Timer* ► Press setting box ► Use the keypad to input value for Idle Timer ► Press ↵ to enter.

4.5.8.5 Engine Cool Down Timer

Press ► Press *System Setting* ► Press *Engine Start / Stop Setting* ► Press *Engine Cool Down Timer* ► Press setting box ► Use the keypad to input value for Engine Cool Down Timer ► Press ↵ to enter.

4.5.8.6 MPU Confirms Engine Started

Press ► Press *System Setting* ► Press *Engine Start / Stop Setting* ►Press *MPU Used to Confirm Engine Start* option ► Click on *YES* or *NO*.

4.5.8.7 Oil Pressure Value Confirms Engine Started

Press ► Press *System Setting* ► Press *Engine Start / Stop Setting* ► Select *Oil Pressure Confirms Engine Started* ► Turn ON *Oil Pressure Confirms Engine Started* ► Press setting box ► Use the keypad to input value for Oil Pressure level to disengage starter motor ► Press ↵ to enter the value.

NOTICE

Under normal conditions engine oil pressure will be greater than 25 Psi when started, however, there are exceptions. Refer to engine manual for appropriate value.

4.5.9 Battery and Charge Alternator Settings

4.5.9.1 Battery Voltage Warning Setting

Press ► Press *System Setting* ► Press *Battery & Charge Alternator Setting* ► Press *Battery Voltage Warning Setting* ► Turn ON *Battery Over Voltage Warning* and *Battery Under Voltage Warning* ► Press settings boxes ► Use the keypad to input values for Battery Under Voltage and Over Voltage Warning ► Press ↵ to enter【Battery Voltage Warnings are disabled during engine cranking】.

4.5.9.2 Charge Alternator Protection Settings

Press ► Press *System Setting* ► Press *Battery & Charge Alternator Setting* ► Press *Charge Alternator Setting* ► Turn ON *Warning* and *Shutdown* ► Press setting box ► Use the keypad to input minimum Charge Alternator output voltage and permitted delay time ► Press ↵ to enter.

4.5.10 Location Service

The location service function is always operating and can obtain any GPS, WiFi or 3G / 4G base station positioning information. The control unit can provide current generator location to the Operator and any remote Viewer

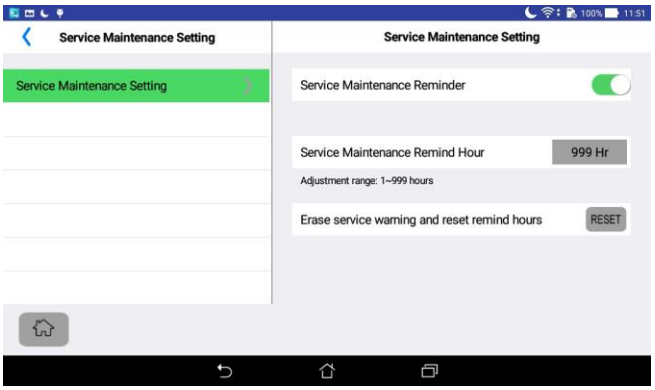
s.

NOTICE

1. **Location information obtained from mobile devices relies on the different methods of GPS, WIFI, or 3G/4G mobile data networks, so there will be deviations from actual location of several meters to several hundred meters.**
2. **Android smart mobile devices in mainland China must download the Baidu map app and can only use GPS to provide location function. Neither WiFi or 3G / 4G base station positioning method can be used**
3. **This location function provides users with only an approximate generator location. Customers cannot require the manufacturer provide additional services beyond these provided or accept any legal obligation to provide such services.**

4.5.11 Service Maintenance Reminder

Press ⚙ ► Press *System Setting* ► Press *Service Maintenance Setting* ► Turn ON *Service Maintenance Reminder* ► Press setting box ► Use the keypad to input a value for Service Maintenance Remind Hour ► Press ↵ to enter.



Service Maintenance setting screen

Clicking the “RESET” button will clear Service Maintenance Reminder and restart the Service Maintenance Reminder countdown timer.

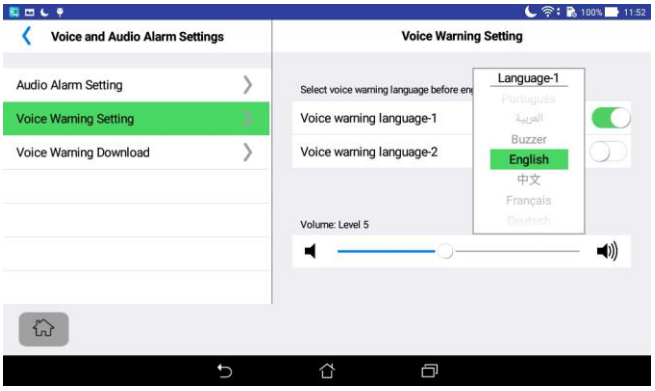
4.5.12 Voice and Audio Alarm Settings

4.5.12.1 Audio Alarm Setting

Press ⚙ ► Press *System Setting* ► Press *Voice and Audio Alarm Settings* ► Press *Audio Alarm Setting* ► Turn ON *Genset Shutdown Failure Audio Alarm* ► Adjust alarm volume.

4.5.12.2 Voice Warning Setting

Press ⚙ ► Press *System Setting* ► Press *Voice and Audio Alarm Settings* ► Press *Voice Warning Setting* ► Click on *Voice Warning Language-1* and *Voice Warning Language-2* ► Select Language ► Adjust alarm volume.



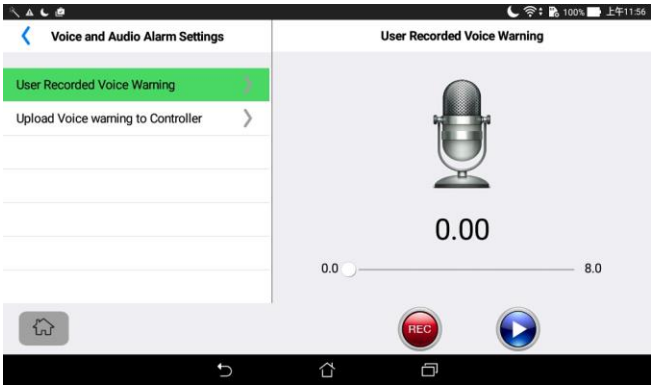
Voice Warning Setting screen

4.5.12.3 User Recorded Engine Start Voice Warning

In addition to built-in engine prestart voice warnings in Chinese, English, Japanese, Hindi, Spanish, French, Arabic, Russian, Portuguese and German, the GCU-4K can also record personal voice warnings.

4.5.12.3.1 Record Engine Start Voice Warning

Press ⚙ ► Press *System Setting* ► Press *Voice and Audio Alarm Settings* ► Press *User Recorded Voice Warning* ► Press REC to start recording the engine start voice warning ► When recording is completed press ■ to end voice recording ► Click on ▶ to listen to the recording just made.

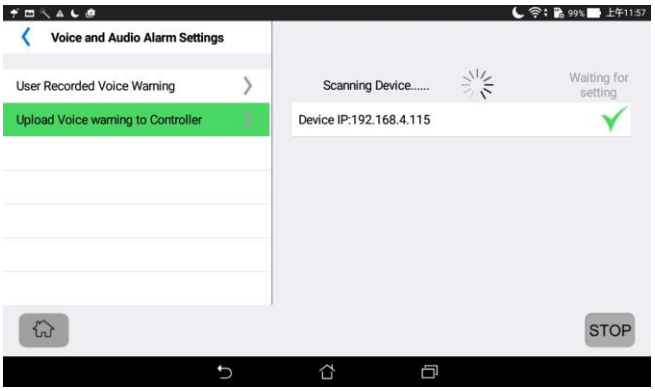


Record Engine Start Voice Warning screen

4.5.12.3.2 Engine Start Voice Warning Download Procedure

Operation on Mobile Device

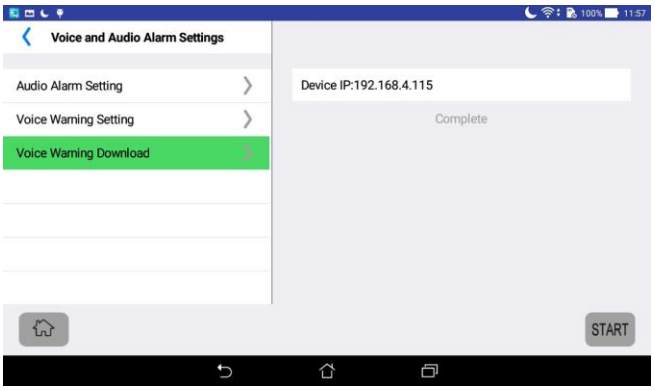
Connect the mobile device used to record the Engine Start Voice Warning to the same Wi-FI domain as the GC4K control unit ► Press ⚙ ► Press *System Setting* ► Press *Voice and Audio Alarm Settings* ► Select *Voice Warning Upload* ► Press START to execute voice warning file transfer ► Press ⌂ to leave this operation.



Screen when mobile device has completed voice warning file transfer

Operations on GCU-4K Display Unit Screen

Press ► Press *System Setting* ► Press *Voice and Audio Alarm Settings* ► Select *Voice Warning Download* ► Press START to execute voice warning file transfer ► Press to leave this operation.



Screen when control unit has completed voice warning file download

4.5.13 Communication Module Settings

Press ► Press *System Setting* ► Press *Communication Module* ► Press *Modbus KCU-05* ► Turn ON *Modbus application* ► Click on the *Baud Rate* and *Parity Bit* and scroll to find the correct settings ► Press the *Slave Address* Setting box ► Use the keypad to input the module address ► Press to enter.

4.5.14 Factory Setting Recovery

Press ► Press *System Setting* ► Press *Factory Setting Recovery* ► Pressing YES to restore all factory settings except for voltage and current calibration settings.

4.5.15 Security Alert Settings

Press ► Press *System Setting* ► Press *Security Alert* ► Turn ON *Genset Position Shifted* and *Battery Power Removed Notice* ► Adjust the Motion Sensitivity setting up or down

NOTICE

If Motion Sensitivity setting is too high the control unit may generate a Push Notification due to slight vibrations. In this case the value of the setting should be adjusted downward, which could potentically cause the genset position shifted Push Notification to become ineffective if set too low.

4.5.16 Erase Event Log, Reset Running Hours or KWH Meter to Zero

Only the Owner will display the option for Erase Event log, Reset Running Hours and KWH meter to zero

Press ► Press *System Setting* ► Press *Event Log, Running Hours & KWH Meter* ► Press *Erase Event Log*, *Reset Running Hours* Timer or *Reset KWH Meter* ► Press YES can reset Running Hours and KWH meter or permanently erase the Event Log.

4.6 About This Unit

The program version numbers and product serial numbers of the GCU-4K control unit and the display unit are provided for reference by the user.

4.7 WIFI Settings

Refer to Section 6.2.1 in the User Manual

4.8 Time and Date Settings

Press ⚙ ► Press *Time and Date Settings* ► Select *Select Time Zone* ► Select the Time Zone of the unit ► *Automatically Calibrate time*

4.9 Replicate Settings

Master GC4K device : This unit supplies all settings to be copied.
Receiving devices (GC4K) : The number of receiving devices can be up to 255 units. All parameter settings will be copied from the Master device.

4.9.1 Settings Transfer Procedure on Master GC4K Device

Connect the Master GC4K to the same WiFi domain as the receiving devices ► Turn the Mode Selector to OFF ► Press and hold Owner SW for two seconds ► Select *Replicate settings* ► Press ENTER to open Settings Transfer function ► Press *Dump Setting to Other Controller* ► Press START to execute Settings Transfer ► After settings have been copied to all receiving devices ► Pressing STOP will abandon Settings Transfer ► If settings have been transferred successfully to all control units press OK to end Settings Transfer.

4.9.2 Operations on Receiving Devices

Connect devices to the same WiFi domain as Master GC4K device ► Turn Mode Selector to OFF ► Press and hold Owner SW for two seconds ► Press *System Settings Transfer* ► Press ENTER to open Settings Transfer function ► Press *Request Settings Dump from Master Device* ► Press START to execute Settings Transfer ► Pressing STOP at any time to abandon transfer procedure ► Each receiving device will indicate ☑ when transfer completed ► press OK to end Settings Transfer.

SECTION 5 : UNIT OPERATING TESTS

5.1 Mode Selector

In AUTO mode engine Run or Stop status is determined by Remote Start terminals 28 & 29. A voice warning will broadcast before engine start. A cool down period will occur before engine shuts down unless the Remote Start signal is closed again.

AUTO is displayed in the lower left hand corner of the screen

1. AUTO flashing : Standby mode
2. AUTO steady : Running mode

1. Engine shuts down directly with no delay for cool down.
2. Clears current failure messages.

Direct start - no voice warning

1. Remote mode is only effective when the controller is connected to a network (See 6.1.1)
2. The Owner can assign one Operator authority to operate the unit and change settings. Once this authority has been assigned to another account the Owner's operating authority will automatically disappear but will still retain Viewer authority (See 6.3.3).
3. Only in Remote mode can the Operator Start / Stop the genset and change settings.

⚠WARNING

The GCU-4K controller can execute Remote Start at any time in REMOTE or AUTO mode. The directives below must be followed otherwise personal injury or death could result :

1. **The generator should be surrounded by a protective fence.**
2. **A permanent warning sign must be posted clearly to alert personnel. The warning sign should convey that "Generator could start at any time".**
3. **The Engine Start Voice Warning should be enabled and its operation should be confirmed (See 4.5.12.2)**
4. **To ensure the safety of personnel the Mode Selector should be in OFF mode or the battery disconnected when maintaining or working around the genset.**

5.2 Display Pages

The unit has five different display pages, which can be scrolled left and right to change.

Location maps | **Voltage / Current Recorder** | **Event log** | **Home page** | **Electrical Power Readings**

5.2.1 Home Page

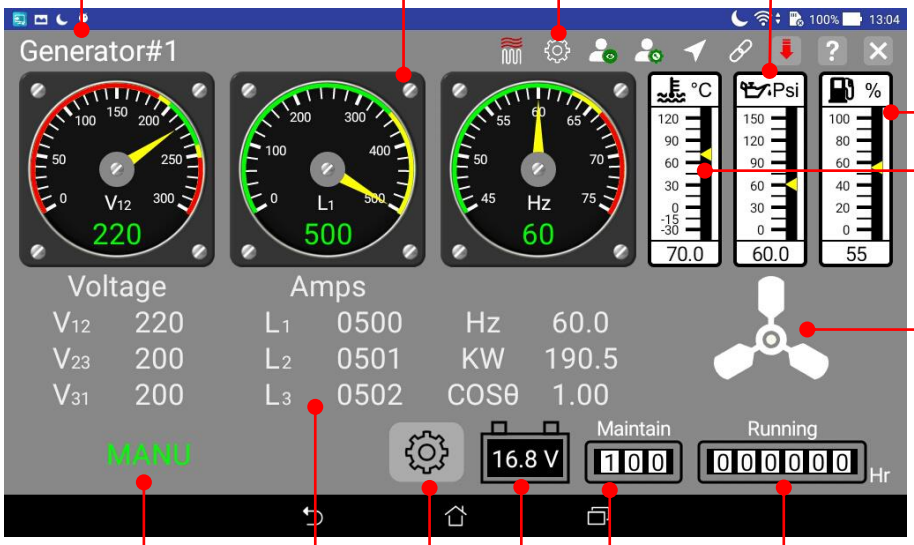
The Home page contains all major engine and alternator parameters. Press to return to the Home Page from other pages.

Analog Gauge Meters
Press and hold any gauge display on Home Page or Electrical Power Readings page to enable choice of display: Voltage, Current, Frequency, KVA, KW, KWH, KVAR or PF

Unit Name (Identifier)
Genset unit name (identifier) Can be edited by Owner. (See 6.3.3)

Status Icons

- : Connected to remote server
- : Unit Location established
- : Remote Operator connected
- : Remote Viewer connected
- : Controller settings enabled
- : Block Heater ON
- : Close Remote APP
- : Close current page
- : HELP function
- : Download software updates (WIFI connection only)
- : Previous page



Oil Pressure Gauge
Press and hold on meter to switch between Psi and Bar

Fuel Level Gauge

Engine Temperature Gauge
Press and hold on meter to switch between ˚C and ˚F

Message Area
Operating status and Messages

: Steady = Stopped

Rotating = Running

: Countdown timers

: Warning message

: Shutdown message

Operating Mode
AUTO/OFF/MANU

Running Hours

Electrical Power Readings

Maintenance Reminder
Countdown timer

Battery Voltage

Function Selection

: Function Selection and System ParameterSsettings

: Home Page

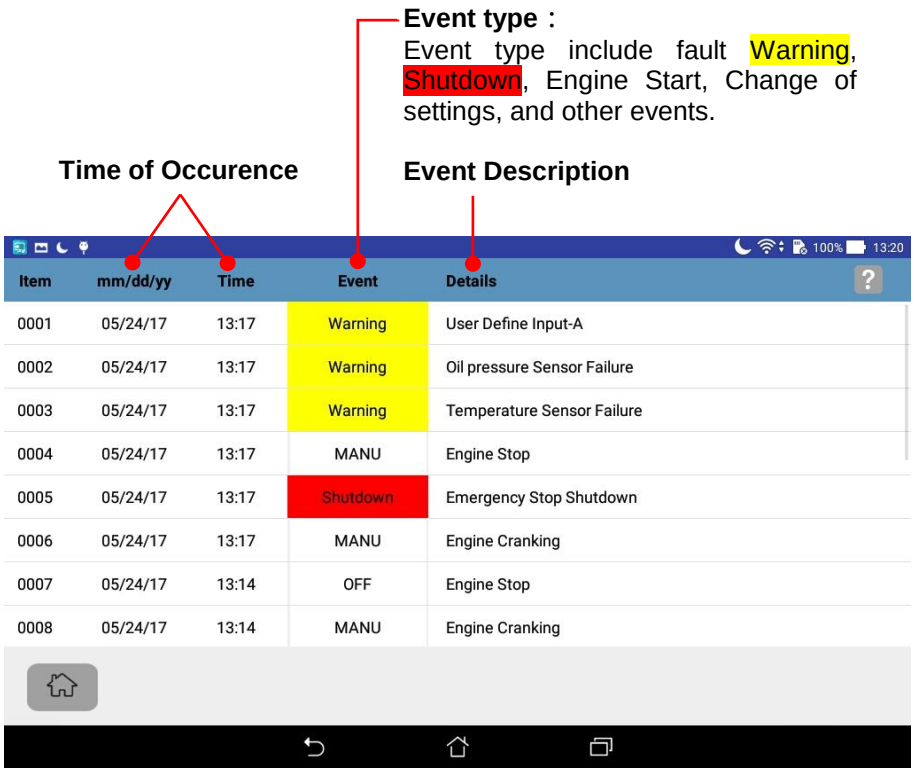
: Mute

5.2.2 Electrical Power Readings

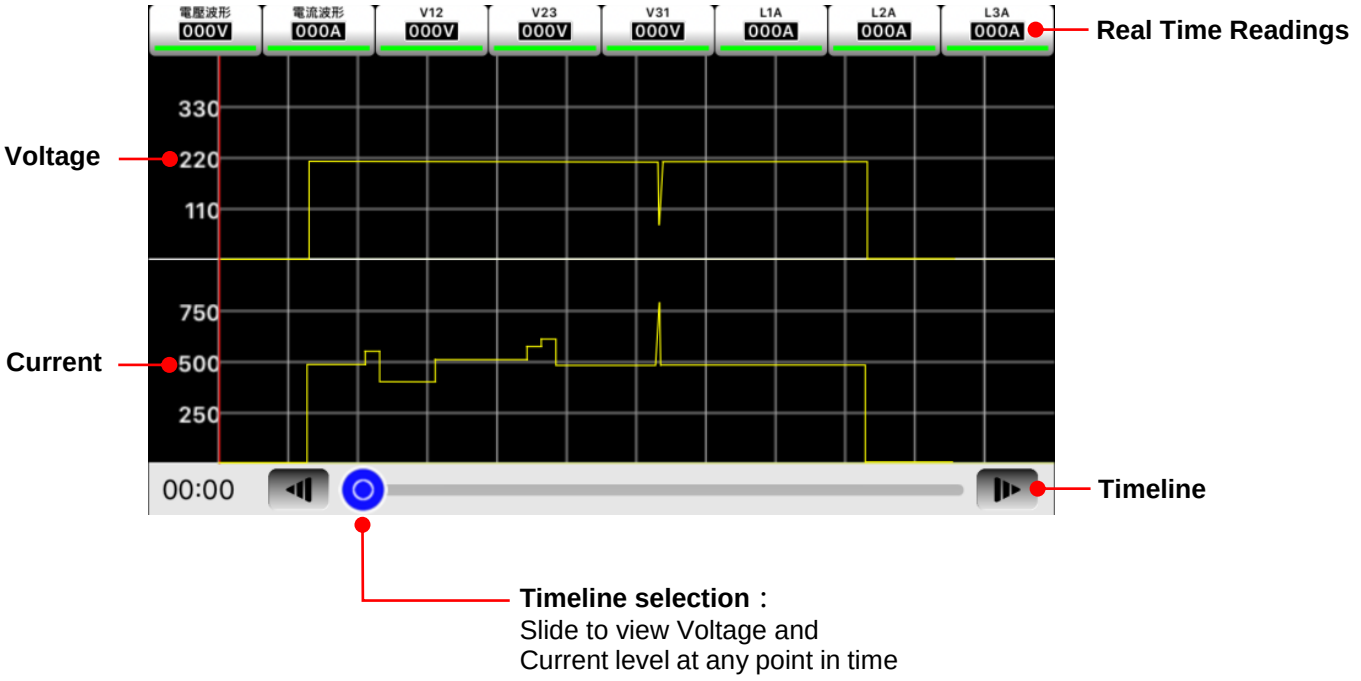
The Electrical Power Readings includes real time display of all phase Voltage and Current, Frequency, KVA, KW, KVAR, and Power Factor (PF).

5.2.3 Event Log Page

The control module can record the most recent 250 events. Each event record includes Event Type, Time of Occurrence, and an Event Description.



5.2.4 Voltage Level / Current Level Recorder Screen



5.2.5 Location Map Page

The Location Map Page is only displayed on the Remote mobile device screen.

Unit Position Symbol

: Currently connected unit

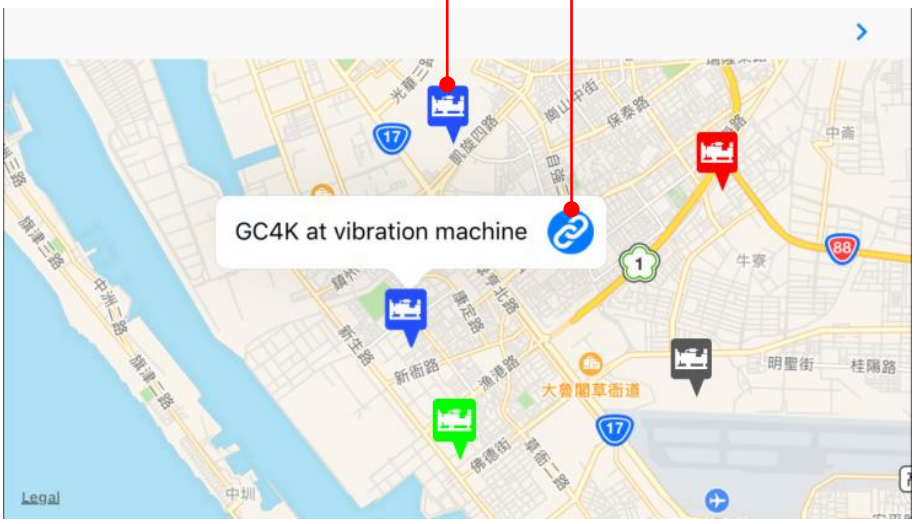
: Unit running

: Unit is shutdown

: A fault has occurred in the unit

Connection button

Clicking on any Unit Position Symbol will open a connection window. Click the connection button in the window to connect with the unit directly.



5.3 Initial Operation (MANU and AUTO)

After all wiring to the genset unit has been connected and system setting parameters have been checked and verified as correct the user should perform an initial operation test in both MANU and AUTO modes. Ensure that all wiring and controller settings match the Genset control and protection requirements.

5.3.1 Items to Check

1. Emergency Stop function
2. Overspeed Protection function
3. Over Temperature Protection function
4. Low Oil Pressure Protection function
5. All display screens

5.3.2 Start Procedure

When mode selector is placed to MANU the starter motor will immediately start cranking. The start procedure will proceed according to cranking time setting → cranking interval setting → repeat start attempts setting, until one of the conditions below occurs.

- Engine oil pressure is established (Refer 4.5.8.7)
- AC Voltage is established
- AC Frequency is greater than 18 Hz

5.3.3 Shut Down Procedure

Place the Mode Selector to OFF position and the engine should immediately shutdown.

5.3.4 AUTO Mode Initial Operation Test

With the Remote Start contacts open place the Mode Selector to AUTO. Short the Remote Start contacts and the start procedure should commence (see 5.3.2) Open the contacts and the shutdown procedure should commence, with a cool down period before stopping.

SECTION 6 : REMOTE OPERATION

6.1 Overview of Remote Monitoring and Control Functions

The following functions can be carried out through the GenOnCall® Remote APP

- View all genset real time operating information.
- Receive push notification of all fault warnings, engine start/stop, security alerts and maintenance reminders.
- Obtain genset location information.
- Review Event Log to assist in remote diagnosis of faults.
- Execute remote genset start and stop operations (Operator authority only).
- Edit system parameters (Operator authority only).
- Erase Event Log and Reset Engine Running Hours (Owner authority only).

6.1.1 Three Options for GC4K Internet Connection

The GC4K controller provides options of Wi-Fi, Dynamic IP network, and 3G/4G Wi-Fi router connections to the Internet. Refer to the comparison table below :

Connection Option	Connection Cost	Connection quality	Connection method	Applicable Environment	Installation and Setting methods	Relevant Section in Manual
Wi-Fi network	Low	Good	Wireless	Any place with WiFi signal coverage	Possibly need to enter a WiFi password	6.2.1
Dynamic IP connection	Medium	Excellent	Wire (RJ45)	Locations with ADSL or fiber optic cable installed	Automatically acquires IP address	6.2.2
3G/4G wireless router (hot spot)	High	Good	Wireless	No WiFi or ADSL but has 3G/4G signal coverage	Possibly need to enter a WiFi password	6.2.3

NOTICE

1. **Networks with unstable or low signal strength may frequently cause the controller and server to disconnect, interrupting remote monitoring functions. Users should take into account the environment where the unit is installed and select a stable network communication interface to provide stable data transmission.**
2. **GC4K remote monitoring functions are provided for no charge by the manufacturer. If a network connection is lost for any reason and remote monitoring or control cannot be carried out, the user has no right to demand the manufacturer pay any damages or assume any liability.**

6.2 Controller Connection to Kutai Server

GC4K controller

Mobile device

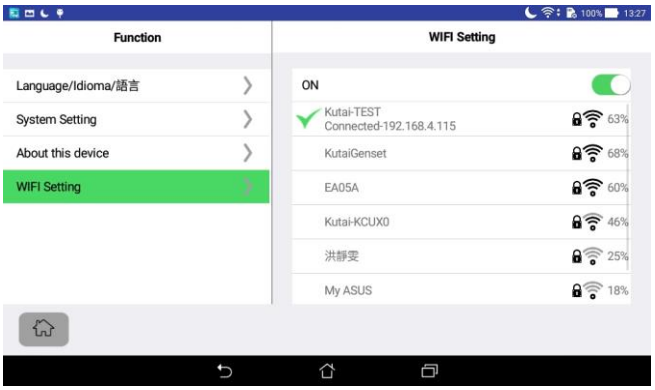
Kutai Server

1. User verification and data security
2. Interconnection between devices

6.2.1 Wi-Fi Connection Settings

Select desired network and enter password to establish WiFi connection

Press ⚙ ► Press *System Setting* ► Press *WiFi Setting* ► Turn ON WiFi ► The controller will automatically list the name and signal strength of all WiFi networks in the surrounding area ► Click on the name of the Wi-Fi network for connection ► Use the keypad to input WiFi password ► Press OK to enter password.



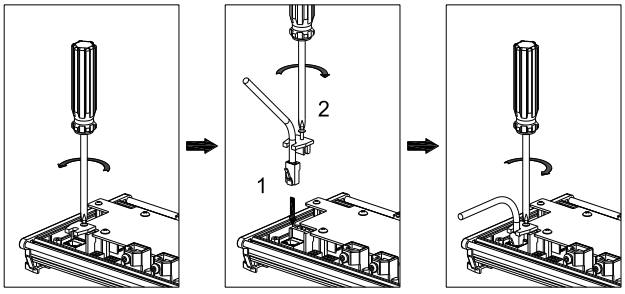
Wi-Fi connection successful screen

When the control unit is successfully connected to a Wi-Fi network a check mark will appear in front of the network name. Press ⌂ to the Home page.

When a controller is connected the Connected icon will appear in the Status bar.

6.2.2 Dynamic IP Connection (Ethernet)

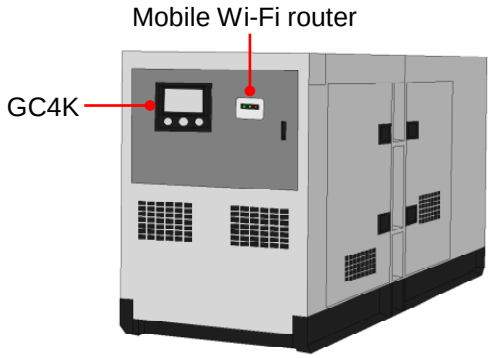
To use a dynamic IP connection first confirm that the RJ45 connector is securely installed on the controller and that any fire wall function must be turned OFF. The controller will automatically obtain an IP address and connect to the Kutai Server. The Controller cannot obtain an IP Address from a Static IP network. An IP router must be added to provide a Dynamic IP address for the controller to connect to.



Attach the RJ45 network connector in accordance with the images to the left. Improper installation could lead to a lose connection from vibration causing the controller to disconnect from the Internet. When a connection is established will appear in the status bar.

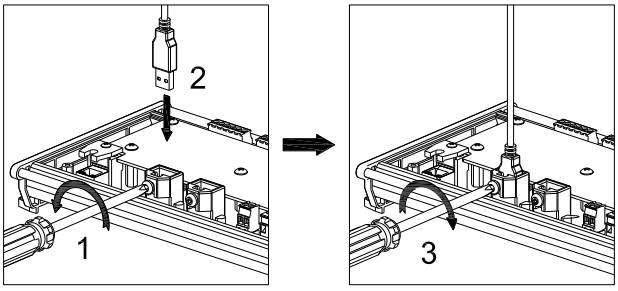
6.2.3 3G / 4G Wireless Router Installation

When a genset is installed in a location without Wi-Fi or Ethernet connections it will be necessary to install a mobile WiFi router. See Section 6.2.1 for settings.



Select a 3G/4G mobile Wi-Fi router suitable for the frequency bands supplied by local wireless carriers. Contact local 3G/4G data service providers for assistance.

1. To avoid shielding the signal do not install inside genset canopy.
2. Pay particular attention to protection from vibration and water entry when installed outdoors.



Power for the mobile Wi-Fi router is provided by the GC4K. Connect as shown in the drawing on the left.

6.3 Mobile Connection to GCU-4K

All Owners, Operators, and Viewers using remote monitoring are required to apply for a personal account on the Kutai Server and follow the procedures below to connect to the controller with GenOnCall® Remote APP.

1. Owner connection procedure

Download GenOnCall® APP Chapter 6.3.1	»	Create a Personal Account on Kutai Server Chapter 6.3.2	»	Bind to Controller to Become Device Owner Assign Operator / Viewers Chapter 6.3.3	»	Connect to Controller With GenOnCall® APP Chapter 6.3.4

2. Operator and Viewers connection procedure

Download GenOnCall® APP Chapter 6.3.1	»	Create a Personal Account on Kutai Server Chapter 6.3.2	»	Wait for Owner to Assign Operator or Viewer Authority	»	Connect to Controller With GenOnCall® APP Chapter 6.3.4

6.3.1 GenOnCall® APP Download

There are three versions of the GenOnCall APP to match the User mobile device operating system and the region where the unit operates, which a User can download from the following sites.

1. Apple iOS (global) : Go to the Apple Store and download the GenOnCall.APP
2. Android (outside mainland China) : Go to Google Play store and download the GenOnCall.APP
3. Android (mainland China) : Go to Mi Store and download the GenOnCall_CN.APP

NOTICE

1. **GenOnCall.APP does not support the mainland China Android operating system. For the mainland China Android operating system users should download the GenOnCall_CN.APP**
2. **In China mainland region the Push Notification function depends on the quality of the telecommunications service and may experience delays or fail to deliver in some situations. Push Notification function reliability cannot be assured.**

6.3.2 Create a Personal Account on The Kutai Server

A personal connection account can be made in any of the following ways.

1. Apply through the "My Account" page on the Kutai website (Section 6.3.2.1)
2. Apply through the iOS GenOnCall® APP (Section 6.3.2.2)
3. Apply through the Android GenOnCall® APP (Section 6.3.2.3)

6.3.2.1 Create an Account on The Kutai Website

Go to the Kutai website www.kutai.com.tw ► Click MY ACCOUNT on the Kutai home page ► Click on CREATE AN ACCOUNT ► Read the *Terms of Services* carefully, then enter the Captcha and press I Agree ► Fill in the user name, email account and password, enter the Captcha and click submit ► Log-in to the email account entered to copy the four digit authentication code sent by the server ► In the Kutai Account Management System page enter the account name and password, enter the Captcha and click Login ► enter the four digit authentication code from the email and click Login The account application procedure is complete.

NOTICE

1. **The system will automatically send a four digit authentication code to the email address entered so it must be a valid email address.**
2. **The user should complete the account opening process within 30 minutes. If the four-digit authentication code expires the user must go through the application process again.**
3. **The letters in Captcha images are not case sensitive.**

6.3.2.2 Create an Account Using The iOS GenOnCall® APP

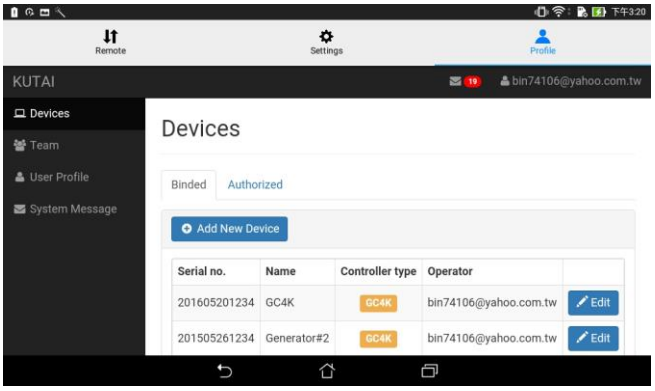
Open **GenOnCall®** APP ► Click on Sign Up ► Read the *Terms of Services* carefully then press ACCEPT ► Fill in User name, email account and password, and click submit ► Log-in to the email account entered and read the four digit authentication code sent by the server ► Enter the account number and password in the login screen and click Login ► enter the four digit authentication code and click Login The account application procedure is complete.

6.3.2.3 Create an Account Using The Android GenOnCall® APP

Open **GenOnCall®** APP ► Click on Sign Up ► Read the *Terms of Services* carefully, then enter the Captcha and press I Agree ► Fill in the user name, email account and password, then enter the Captcha and click submit ► Log-in to the email address entered and copy the four digit authentication code sent by the server ► Enter the email account and password in the login screen and click Login ► enter the four digit authentication code and click Login The account application procedure is complete.

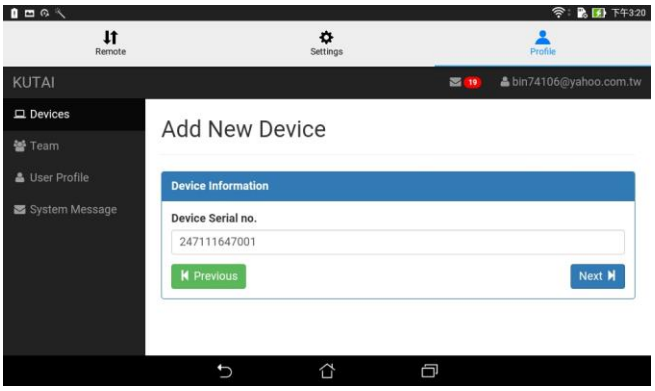
6.3.3 Bind The Controller and Edit Operator and Viewers

Before any GC4K controller can be remotely monitored and controlled it must first be bound to an owner through the binding procedure. The owner can then assign operator or viewer status to other accounts registered on the Kutai server. The Kutai server will reject connections to controllers that have not been binded to an owner or from accounts without operator or viewers authority.



Step 1

Log-in with the GenOnCall® APP. Press Profile to enter the devices screen. Press Add New Device to open up a Device Serial no. input box.

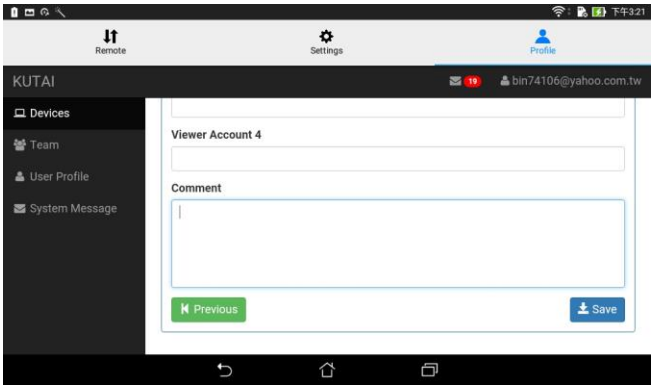


Step 2

Fill-in the serial number of the device to be binded. Press Next to enter the device Information screen.

1. When binding a controller it must be connected to the Kutai Server. If the controller is not connected to the Internet or the wrong serial number is entered the system will show “Device OFF Line” message.

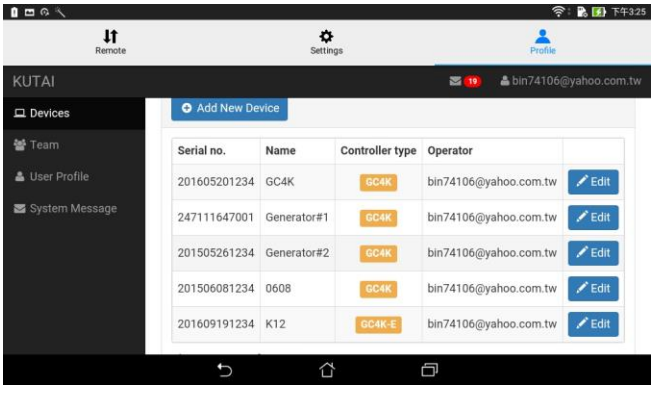
2. If the controller is already bound to another owner the screen will display a message “Device Already Bound”.



Step 3

Edit the Device Name, assign operator and Viewer authority status. Press Save and bak to device page automatically.

A controller allows only one operator and up to seven viewers. The account that logs on to the bind the unit will become the owner and will have both operator and viewer authority at the same time.

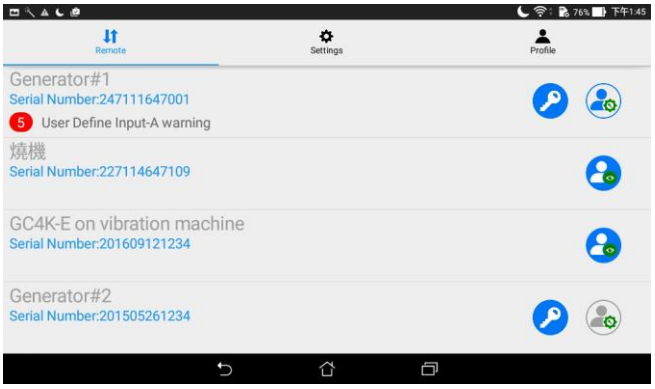


Step 4

View details of binded devices
the screen will add the newly bound device after saving.

6.3.4 Establishing Connection With a Controller

After all steps are in 6.3.3 are completed a user can open the GenOnCall® remote APP on a mobile device to establish the connection with the controller.



Select the controller to be connected and click on the connect button to the right to establish a connection.
Explanation of symbols :

: Operator connection button
: Viewer connection button
: Grey color indicates that the controller is off line.
: Owner of the device

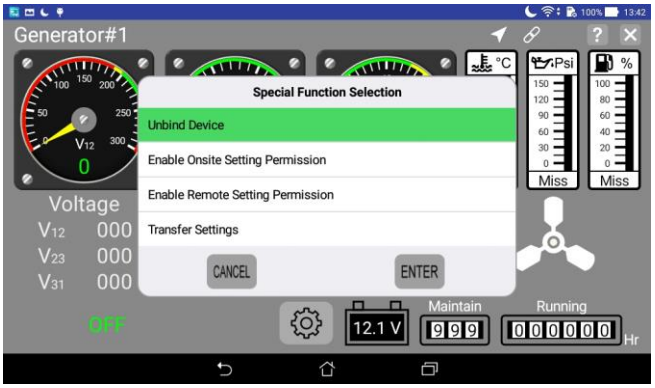
Operator log-on screen

The AUTO / OFF / MANU buttons will only be displayed when logged on as the operator.

6.3.5 Unbinding a Device

Once a controller is bound to an owner, it cannot be bound by another account unless the unbinding procedure is carried out first.

Place Mode Selector to OFF ► Press and hold the owner SW for two seconds ► Select *Unbind Device* ► Press ENTER to carry out Unbind device procedure.

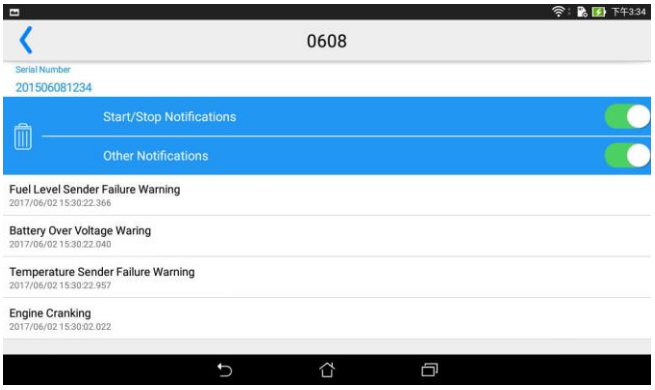


Unbinding screen

6.3.6 GenOnCall® Remote : Log-in to Advanced Settings Screen

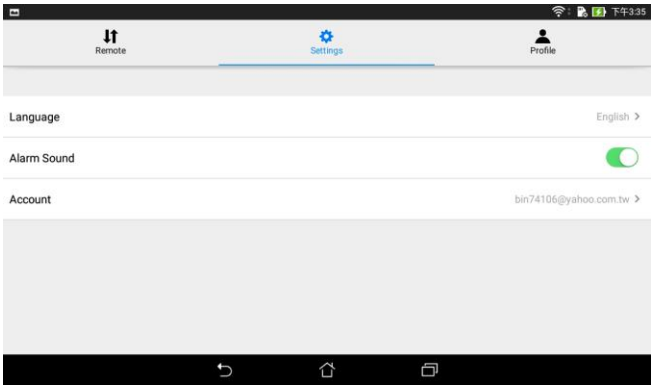
6.3.6.1 Push Notification Editor

In the “Remote” screen click on the blank area of the desired controller to directly enter the Push Notification recorder page.



1. Clicking can delete all “Push Notification” at one time.
2. Clicking turns ON or OFF the *Start/Stop Notification*
3. Clicking turns ON or OFF Other *Notifications*.
4. To delete an individual message just quickly swipe left on the notification.

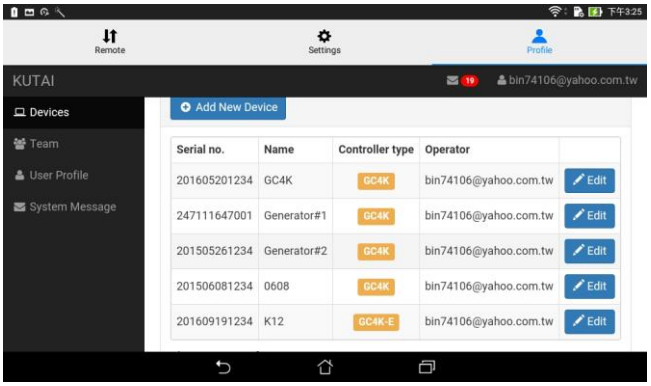
6.3.6.2 Overview of Settings Options



Pressing to enter the setting screen the user can select following options on the mobile device :

1. Select English, Traditional Chinese, or Spanish as the display language of the mobile device.
2. Turn audio alarm ON/OFF by clicking Alarm Sound .
3. Log-out of User account.

6.3.6.3 Overview of Profile Options



Profile Main Screen
In the Profile screen a user can set the following items :

1. Devices：list all bound and authorized devices.
2. Team：List of all other accounts that have ever been authorized by this account.
3. User Profile : Edit individual information and password.
4. System Message：Record of all controllers that have ever been bound or been authorized.

SECTION 7 : GCU-4K INTRODUCTION

7.1 Product Overview

The GCU-4K control module provides complete protection for generator sets, remote monitoring, location information of the unit and push notification. The user can perform remote settings directly from the touch screen display or through the GenOnCall® remote monitoring APP to set control and protections required by the unit. Applicable to almost all generator sets that require remote control and protection.

7.2 Features

- Front panel meets IP65 standard
- User-friendly, intuitive touch-screen interface to input all settings
- Integrated, modular design control panel with Mode Selector Switch, Emergency Stop Button, and Audio / Voice Speaker
- Digital and Analog gauge displays for all electrical parameters
- Wi-Fi, 3G/4G Mobile Router and physical Ethernet network connections
- Free iOS and Android GenOnCall® APP download enables remote operation, monitoring and configuration for smart phone or tablet
- Choice of Chinese, English, Spanish language display
- Engine Start Voice Warning broadcast in ten most common languages – also allows for user recorded engine start voice warnings
- Free online updates of controller firmware and GenOnCall® APPs
- Provides generator location services (GPS)
- Push notification for Engine Start / Stop and Fault Alarms – records up to 250 events
- Real-time graphic display of AC current and voltage curves
- Transfer Settings function (dump function) eliminates need to program each controller individually
- Supports Modbus / SNMP / RS-485 protocols (via optional modules)
- Battery power removed and Genset position Shifted alarm for theft alert
- Allows for one Operator and up to seven Viewers to connect simultaneously for remote monitoring and control
- Engine block heater control for use in cold climates
- High-precision Ceramic Capacitive oil pressure and digital water temperature senders are standard
- Two user-defined outputs and inputs for control or protection

7.3 Displayed Parameter

- AC power parameters – V(RMS), A(RMS), Hz, KW, KWH, KVA, KVAR & PF
- Operating Hours / Maintenance Hours / DC Battery Voltage
- Operating Temperature (˚C or ˚F), Oil Pressure (PSI or Bar) and Fuel Level (%)
- Real-time graphic displays of current and voltage power quality
- Records up to 250 events – Engine Start / Stop and all Fault Alarms
- Genset GPS location map (only on remote monitoring APP)

7.4 Monitoring and Protections

- Full phase Over Voltage / Under Voltage and lost phase
- Current overload
- High water temperature
- Low Oil Pressure
- Engine Over Speed / Under Speed protection
- Low Fuel Level
- Charging Alternator failure
- Battery abnormal voltage
- Scheduled Maintenance notification
- Emergency Stop alarm
- Water temperature sender and oil pressure sender failure
- Wi-Fi signal strength too low warning
- User-defined input

NOTICE

When battery power is removed or the generator is shifted from existing orientation the GCU-4K control unit will automatically send an alarm message. The user will be made aware that the generator is being damaged or stolen.

7.5 Electrical Characteristics

Item	Specification
DC power input	9 – 40 Vdc
AC power input	15 – 500 Vac (Phase to Phase)
AC power frequency	50/60 Hz
Engine start signal output	10 Amp @ 12/24 Vdc
Engine stop signal output	10 Amp @ 12/24 Vdc
Preheat signal output	2.5 Amp @ 12/24 Vdc
Screen lighting signal output	2.5 Amp @ 12/24 Vdc
Fault alarm signal output	2.5 Amp @ 12/24 Vdc
Overload trip signal output	2.5 Amp @ 12/24 Vdc
IDLE control signal output	2.5 Amp @ 12/24 Vdc
Operating Temperature	-20 to +70 ˚C
Relative humidity	Max. 95%
Static power consumption	less than 7W
Rated burden	greater than 2.5VA
CT secondary current	1A / 5A

SECTION 8 : SOFTWARE AND FIRMWARE UPDATES

Based on functional requirements Kutai Electronics will provide updates to the GC4K control firmware and GenOnCall® APPs from time to time. An update icon will display for quick download whenever the controller or a mobile device is connected to the Internet and there are new updates.

NOTICE

To ensure that the controller and mobile device operating optimally the user should connect the controller and mobile devices to the internet on a regular basis to check whether or not there are any new updates.

SECTION 9 : OPTIONAL ACCESSORIES

1. ModBus communication module (KCU-05). For installation instructions refer to the KCU-05 User Manual.
2. SNMP communication module (KCU-06). For installation instruction refer to the KCU-06 User Manual.
3. OPS-02 Oil Pressure Sender cable (5 meters).
4. TS-03 Temperature Sender cable (5 meters).