

SMS-100

SMS GSM Messenger System



For Windows XP and Windows 7



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SECTION 1 : INTRODUCTION

1.1 Summary

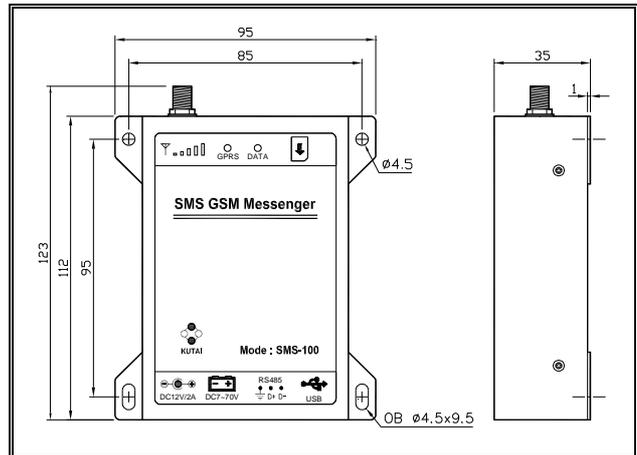
SMS-100 SMS GSM messenger system (Referred to as SMS-100) An automated monitoring of ECU and ATS controller (Only support KUTAI products) operation status, and able to provide alarm message via SMS message (SMS : Short Message Service) to notify the user. With its automatic GPRS network continuous monitor or remote control the ECU or ATS controller as well as modify the controller system parameters and configuration. The SMS-100 contains GSM module (Global System for Mobile Communications Module) and a RS485 communication interface to connect to a controller that is equipped with the KCU-02 communication module. User is required to apply install a SIM card from the local telecommunication carriers. Configurations are made either with SMS message or through a PC (Portable Computer) that is installed with the SMS-100 Setup software. USB connected via a USB port and proprietary software (SMS100 Setup).

1.2 Key Features

- Quad-band system : GSM 850, EGSM 900, DCS 1800, PCS1900.
- Transmission :
Class 4(2W) at GSM 850 and EGSM 900
Class 1(1W) at DCS 1800 and PCS 1900
- Auto Connection of GPRS via SMS message.
- When GPRS connection ends or fails to connect, system will automatically turn into auto-answer SMS transmission mode.
- Obtaining controller alarm messages via SMS text message.
- Set specific SMS-100 parameters, configure via an SMS message command.
- Up to 48 SMS alarm messages, maximum of 120 characters or 60 Chinese characters per message.
- Auto-answer mode : All controller generated alarm message will be automatically sent through SMS message.
- Re-alarm trigger time : When the controller generates an alarm message and if the problem is not resolved, three-alarm trigger time interval can be set from 00:00 to 59:59 (min : sec). Maximum of 3 alarm repeats.

- Notify Contact : Preset of maximum up to 5 sets of telephone numbers.
- Event Log : Record up to 32 sets of controller alarm messages (Including SMS command text message)
- Security Settings : SMS command text message can only be executed accompanied by correct password supplied.
- RS485 interface : Connection for communication port to the Controller communication device.
- USB port : For connecting to PC to monitor and configure settings via proprietary software (SMS-100 Setup)
- GPRS : PC end proprietary software (GPRS Server) to monitor, remote control and configure the ECU or ATS controllers via the internet.
- Power input : 7 ~ 70VDC / 2A

1.3 Dimension



1.4 Hardware Requirement

The SMS-100 exterior is shown in Figure 1.1 and connection example in Figure 1.2.

SMS-100 currently only supports Kutai GCU or ATS controllers (AMF-10, GCU-100, GCU-3000, ATS-22, ATS-33, ATS-34, ATS-PLC). The status of SMS-100 is indicated via the 3 color LED indicator (DATA : communication status indicator) and GSM signal strength indicator. To ensure the best quality GSM signal, user is required to connect a 50Ω impedance antenna.

SMS-100 supports a wide range of DC power input, from 7 to 70VDC or from an AC power supply converted into +12 VDC / 2A Output.

NOTE :

- (1) SMS-100 can only accept a single power input at one time.
- (2) The SMS-100 must be connected to power before connecting to the PC.

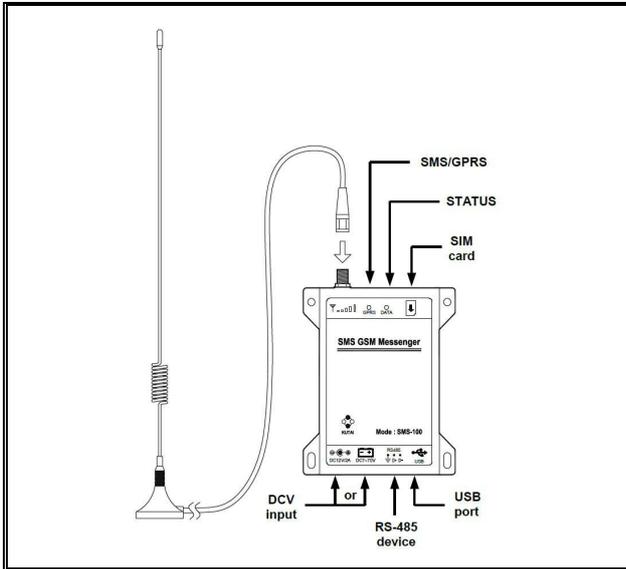


Figure 1.1 SMS-100

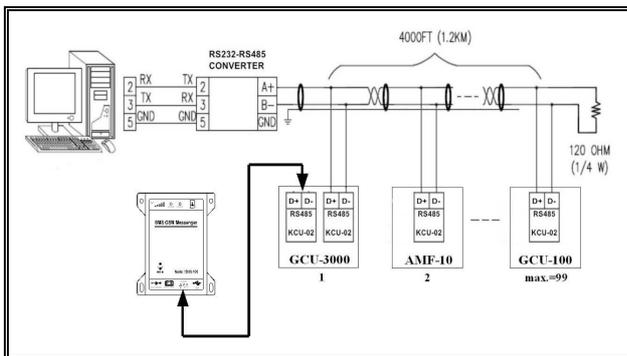


Figure 1.2 Connection example

Users can connect PC via the USB port from the PC to the SMS-100, and execute SMS100 Setup software to configure all parameter settings.

To connect the SMS-100 through RS485 port, the Kutai controllers must be equipped with KCU-02 RS485 module.

1.5 Status Indicator Description

When the SMS-100 is installed on the work site (Reference from Figure 1.1 and Figure 1.2 Connection example), after connecting to power, refer to Table 1.1 for operating status. If failure or error occurs, power down the SMS-100 and exclude all error(s) then reconnect to power to restart. Users can refer to the Chapter 5 and 6 to execute troubleshooting.

In addition signal and power indicator there is a GPRS indicator (see Table 1.2). When the green LED is lit, the SMS-100 is under the GPRS mode. When the GPRS indicator is turned off, the system is in Auto-answer mode.

When the GSM signal strength indicator appears as shown in Figure 1.3, the SMS-100 is in search of telecom signals and executing registration.

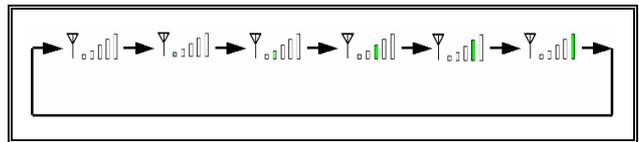


Figure 1.3 Search / registering telecom signal

SIGNAL STRENGTH	DATA	DESCRIPTION
		Strong Signal Quality
	+	System Initializing
	+	GSM initializing and registering to network
	+	System memory failure
	+	Incorrect PIN code or missing SIM card
	+	PIN code registration failure
	+	Network login failure
	+	ECU/GCU offline
	+	GSM module offline
	+	System code error
	+	RS485 Configuration Error or no setting
	+	ECU / GCU controller selection not matched
		PC connected (USB)
		Transmitting / Receiving ECU / GCU data
		Transmitting / Receiving GSM module data

Table 1.1 Status Indicator (1)

GPRS	DESCRIPTION
	GPRS Mode
	SMS Mode

Table 1.2 Status Indicator (2)

NOTE

When start the SMS-100 (SMS mode) for the first time. It is strongly recommended for user to send a SMS message command according to chapter 4.6 Reading Controller Information to confirm normal operation of messaging capability.

SECTION 2 : USB DRIVER INSTALLATION

Prior to install the USB driver software, power up SMS-100 and connect to PC, then continue with the following installation sequence.

Step 1 : Select accordingly and click "Next>"



Step 2 : Select accordingly and click "Next>"



Step 3 : Select the desire location and click "Next>"



Step 4 : Click "Continue Anyway"



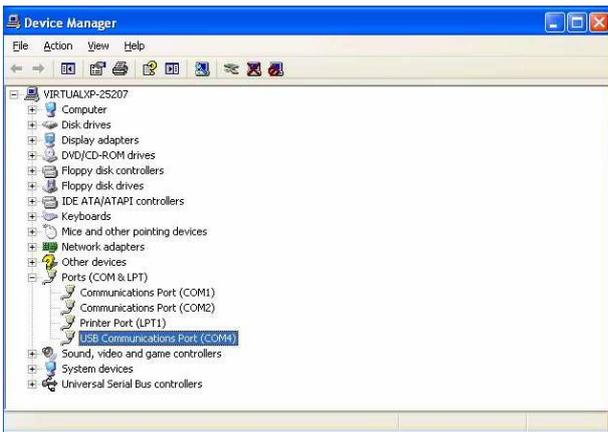
Step 5 : Begin installation



Step 6 : Click “Finish” to end installation



Step 7 : Click on My Computer > Click Control Panel > Click System > Click Device > Click Device Manager and check if the device is successfully installed (SMS-100 need to be connected to the PC)



SECTION 3 : APPLICATION SOFTWARE

For installation of SMS-100 Setup and GPRS Server software, please refer to the corresponding user manual.

3.1 SMS100 Setup Main Screen Display

In Figure 3.1 the controller model shown in the left side of (Circled in RED) must be consistent to the controller (COM & LPT) connected. If differs, click <setting> and modify to the correct controller and model. The RS485 address and baud rate also need to be consistent with the controller’s configuration. If differs, enter <setting> to correct to the same.

In Figure 3.1, the selected controller model is GCU-100. User needs to configure the SMS-100 RS485 address and baud rate according to the GCU-100 controller’s setting in item 55 and 56.

AMF-10 & GCU-100	
ITEM	DESCRIPTION
55	RS485 Module address setting
56	RS485 Module & PC Baud rate setting

Table 3.1 Controller Configuration



Figure 3.1 SMS100 Setup main screen (1)

When the controller generates a warning message, SMS-100 will send out corresponding SMS text message to the mobile number recorded (See section circled in RED in Figure 3.2). To enter or modify the mobile number click <setting>.



Figure 3.2 SMS100 Setup main screen (2)

When starting the SMS-100 for the first time or using the SMS command message to start the GPRS connection, SMS-100 will connect to the internet according to the setting in Figure 3.3 (Circled in RED). For configuration and IP information, contact with your internet service provider and execute the GPRS Server PC software to begin operation.



Figure 3.3 SMS100 Setup main screen (3)

3.2 SMS100 Setup Warning Display

Information shown in Figure 3.4 corresponds to the warning messages in GCU-100 controller factory setting. User is able to modify the message content by clicking <Edit>.

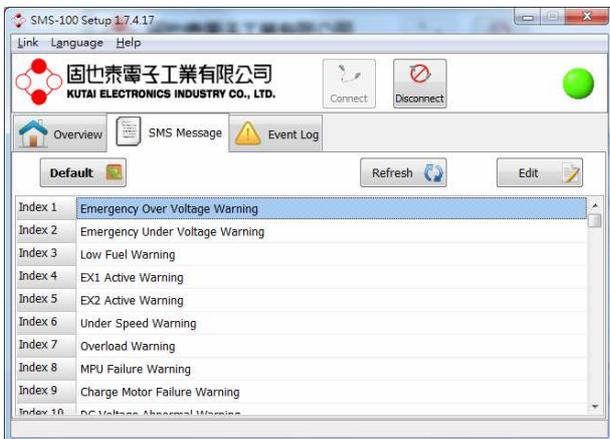


Figure 3.4 SMS100 Setup warning message screen

3.3 SMS100 Setup Event Log Display

Information shown in Figure 3.5 are the latest 32 warning message and records of SMS message commands from the sample GCU-100 controller.

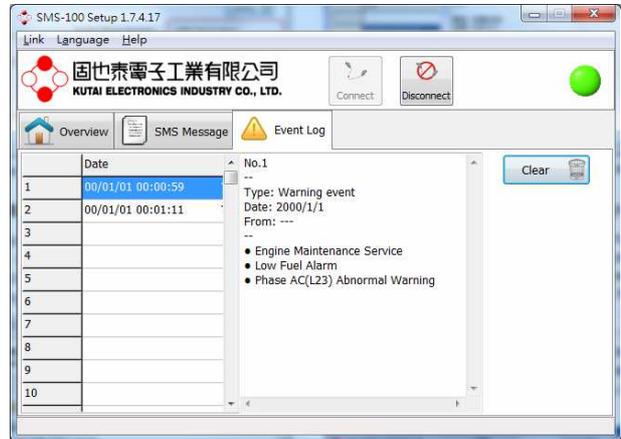


Figure 3.5 SMS100 Setup Event Record

3.4 GPRS Server Main Screen Display

When user wish to carry out GPRS operation, must first execute the GPRS Server software, then start up the remote the SMS-100 (or via SMS message command). After successful connection, the PC will display the corresponding controller model information, IP and other information (See Figure 3.6). User then click on the icon of connected controller on the left of display screen to enter and view the controller status and command (See Figure 3.7 GPRS Server main screen).



Figure 3.6 GPRS Server main screen (1)



Figure 3.7 GPRS Server main screen (2)

SECTION 4 : SMS COMMAND PROTOCOL

The purpose of this chapter is to demonstrate to user the operation on how to obtain and configure the SMS-100 and controller via SMS command messages.

SMS messages can be divided into 7 bits of composed letters or symbols and 8bits characters (for example : Chinese characters ... etc.). When composed message contains mixed languages, the maximum characters are limited to 70 characters. In a full English message, the maximum allowed character is limited to 160 characters.

NOTE

To avoid damage to store font files, resulting in incomprehensible characters, all responding text message are responded in English only (except Alarm message content).

4.1 Set up and Sending SMS Command

This section contains step by step information and instruction on how to set up a SMS command message.

Step1 : In you mobile phone, find message option / folder and then enter.



Step 2 : Send a new message.



Step 3 : Create a text message.



Step 4 : In the Recipient column enter the phone number from the SIM card stored inside the SMS-100. And type in the command message in the text column.

Example :

- (1) Enter SIM card phone number "0933326123"
- (2) Set up the first group mobile number : "1234+PH1=+886933326303"



Step 5 : After completing Step 4, send out the text message.



4.2 Mobile Number Setting

To obtain, clear and setup the designated mobile phone number(s) to receive the warning messages when the engine control unit detects failure. *User can set up to total of 5 designated mobile numbers to receive the warning message.

4.2.1 Mobile Command Format Setting

This section is only an example to describe the command format. Not to be used to set up individual mobile phone numbers command.

The set up of mobile phone numbers command format is divided into three categories :

- (1) Obtaining the SMS-100 saved mobile number
`<pswd>+PH<index>=`
- (2) Clear / Erase the SMS-100 saved mobile number
`<pswd>+PH<index>= *`
- (3) Configure the SMS-100 responding to mobile number
`<pswd>+PH<index>=<string>`

The SMS-100 respond message packet format :

- (1) SMS : password error!
- (2) SMS : command format error!
- (3) SMS : +PH<index> command accepted
- (4) SMS : +PH<index> command failure!
- (5) SMS : +PH<index> dial number
 format warning or none set
- (6) SMS : +PH<index>=<string>

Description :

<pswd> : SMS message command activation password (Factory preset password : 1234)

<index> : No.1 to 5 message recipient (Max of 5 sets of mobile number recipient)

Example : PH<index>

For mobile number No.1 enter PH1

<string> : User local / domestic or international mobile number.

4.2.2 Mobile Number Setting Example

If user wish to test the unit according to the given examples, first enter the phone number from SIM card installed inside the SMS-100 into the recipient column, then type the example command into the message column (excluding the “ ” quote marks) and press send. After few seconds the SMS-100 should send the result to user’s mobile phone accordingly.

*Correct and existing mobile numbers must be entered into the SMS-100 notify list phone number, otherwise no respond or warning message will be received.

Example 1 : Set up the first set of notify phone number, Presented in international mobile phone number format.

Sender : Key in the following character string into the message column and press send.

“1234+PH1+=+886933326303”

SMS-100 : After SMS-100 received and processed the command, it will respond with a message to confirm the command result.

“SMS : +PH1 command accepted”

Example 2 : Set up the 2nd set of notify phone number, Presented in local domestic mobile number format.

Sender : Key in the following character string into the message column and press send.

“1234+PH2=0933326303”

SMS-100 : After SMS-100 received and processed the command, it will respond with a message to confirm the command result.

“SMS : +PH2 command accepted”

Example 3 : Set up the 3rd set of notify phone number, Presented in local domestic mobile number format.

Sender : Key in the following character string into the message column and press send.

“1235+PH3=0933326303”

SMS-100 : After SMS-100 received and processed the command, it will respond with a message to confirm the command result. If user receives the following message, then it means the user password was incorrect.

“SMS : +PH3 password error!”

Example 4 : Retrieving the 2nd set mobile number.

Sender : Key in the following character string in the message column and press send.

“1234+PH2=”

SMS-100 : After SMS-100 received and processed the command, it will respond with a message to confirm the command result. If user receives the following message, then it means the mobile number retrieval is successful.

“SMS : +PH2=0933326303”

4.3 Controller Warning Message Setting

The controller warning message recorded in the SMS-100 must correspond to the controller’s warning message otherwise users end will not be able to identify the correct meaning of the warning message.

4.3.1 Controller Warning Message Format Setting

<pswd>+WM<index>=<string>

The SMS-100 Response message pack and format:

- (1) SMS : password error!
- (2) SMS : command format error!
- (3) SMS : +WM<index> command accepted
- (4) SMS : +WM<index> command failure!

Description :

<pswd> : Set the controller warning message start up command password (Factory preset password : 1234)

<index> : 1~48

This value must be correctly entered and correspond to the dedicated <index> setting (See Figure 4.3.1 for example). If incorrectly entered, then the definition of the received warning message will be inconsistent to the actual warning.



The followings are the <index> range for the controllers.

- AMF-10 <index> value range : 1 ~ 32
- GCU-100 <index> value range : 1 ~ 40
- GCU-3000 <index> value range : 1 ~ 32
- ATS-22 <index> value range : 1 ~ 18
- ATS-33 <index> value range : 1 ~ 18
- ATS-34 <index> value range : 1 ~ 18
- ATS-PLC <index> value range : 1 ~ 18

<string> : Warning message string

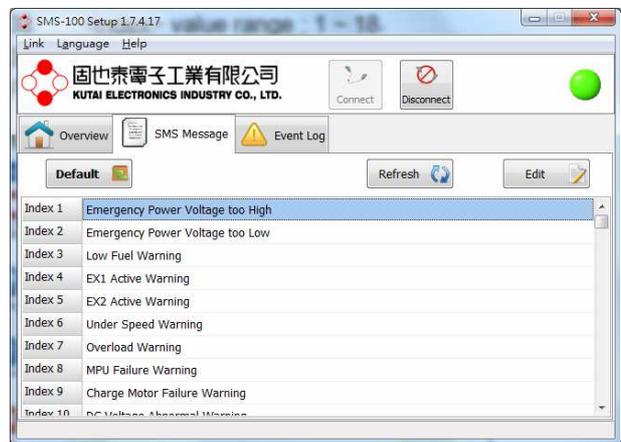


Figure 4.3.1 GCU-100 controller warning message

In Figure 4.3.1 GCU-100 Controller Warning Message 1 and 2 (index 1 & index 2) the warning message is poorly indicated, therefore appropriate correction is demonstrated in the follow example. The example is Figure 4.3.1 is not the factory original warning message and is only presented as demonstration, the actual factory settings is shown in Figure 4.3.2.

4.3.2 Controller Warning Message Example

Example 1 : Correcting description of Index 1 & Index 2 description in Figure 4.3.1.

Step 1 :

Sender : Key in the following character string in the message column and press send.

“1234+WM1 = Emergency Over Voltage Warning”

SMS-100 : After SMS-100 received and processed the command, it will respond with a message to confirm the command result. If user receives the following message, then it means the correction of warning message description from Index 1 is successful.

“SMS : +WM1 command accepted”

Step 2 :

Sender : Key in the following character string in the message column and press send.

“1234+WM2 = Emergency Under Voltage Warning”

SMS-100 : After SMS-100 received and processed the command, it will respond with a message to confirm the command result. If user receives the following message, then it means the correction of warning message description from Index 2 is successful.

“SMS : +WM2 command accepted”

Step 3 : (Selection)

Open the SMS-1-Monitor software and click on  setting, user will find the description for Index 1 & Index 2 has been corrected (See Figure 4.3.2).

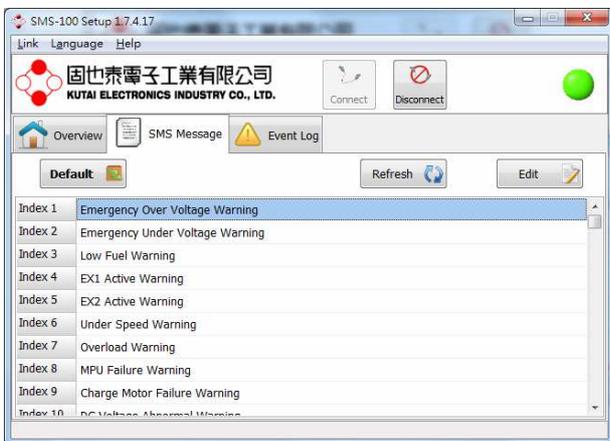


Figure 4.3.2 GCU-100 Controller warning message correction

Example 2 : Correcting description of Index 3 description in Figure 4.3.1.

Sender : Key in the following character string in the message column and press send.

“1234+WM3=Low Fuel Warning”

SMS-100 : After SMS-100 received and processed the command, it will respond with a message to confirm the command result. If user receives the following messages, then it means the correction of warning message description from index 3 is successful.

“SMS : +WM3 command accepted”

4.4 Password Change

In the following example, a demonstration of activation password change.

4.4.1 Updating Activation Password Format Setting

Updating activation password format setting :

<pswd>+PWD=<new-pswd>

The SMS-100 Response message pack and format:

- (1) SMS : password error!
- (2) SMS : command format error!
- (3) SMS : +PWD command accepted
- (4) SMS : +PWD command failure!

Description :

<pswd> : Password (Factory preset password : 1234)

<new-pswd> : New Password. Accept only numeric 0 to 9 and characters from a, A to z, Z.

4.4.2 SMS Command Password Change Example

Example 1 :

Sender : Key in the following character string in the message column and press send.

“1234+PWD=5A7z”

SMS-100 : After SMS-100 received and processed the command, it will respond with a message to confirm the command result. If user receives the following message, it means the password change is successful.

“SMS : +PWD command accepted”

Example 2 :

Sender : Key in the following character string in the message column and press send.

“98a0+PWD=1234”

SMS-100 : After SMS-100 received and processed the command, it will respond with a message to confirm the command result. If user receives the following message, then it means the activation password "98a0" is incorrect, inconsistent with the programmed password.

"SMS : password error!"

4.5 Re-alarm Triggering Time Setting

Re-alarm trigger time: When the controller generates an alarm message and if the problem is not resolved, the re-alarm trigger time interval can be set from 00:00 to 59:59 (min : sec). Maximum of 3 alarm repeats.

4.5.1 Re-alarm Warning Message Format

Re-alarm warning message format setting :

- (1) Three repeatedly re-alarm warning messages
<pswd>+STM=*
- (2) Re-alarm interval setting
<pswd>+STM=<string>

The SMS-100 Response message pack and format:

- (1) SMS : password error!
- (2) SMS : command format error!
- (3) SMS : +STM command accepted
- (4) SMS : +STM command failure!

Description :

<pswd> : Password (Factory preset password : 1234)

<string> : Time Format (min : sec) with five characters time string from 00:00 to 59:59.

4.5.2 Re-alarm Warning Message Example

Example 1 : Set the re-alarm interval to 600secs.

Sender : Key in the following character string in the message column and press send.

"1234+STM=10:00"

SMS-100 : After SMS-100 received and processed the command, it will respond with a message to confirm the command result. If user receives the following message, then the interval setting is successful.

" SMS : +STM command accepted "

Example 2 : Three repeatedly re-alarm warning message.

Sender : Key in the following character string in the message column and press send.

"1234+STM=*"

SMS-100 : After SMS-100 received and processed the command, it will respond with a message to confirm the command result. If user receives the following message, then the 3 repeatedly re-alarm message setting is successful.

"SMS : +STM command accepted"

*If the controller generated warning is not eliminated within the interval time, the SMS-100 will execute re-alarm for total of three times only.

4.6 Reading Controller Information

Through the SMS message, user is able to obtain certain status information without implementing the security password.

4.6.1 Reading Controller Information Format

Reading Controller Information Format : +STS=

The SMS-100 Response message pack and format :

- (1) SMS : command format error!
- (2) SMS : <string>

Description :

<string> : Controller information

Current available four data messages :

- (1) Re-alarm warning message interval setting
- (2) DCV : Battery DC voltage
- (3) ECU communication failure : SMS-100 & controller communication failure
- (4) ECU normal operation : SMS-100 & controller normal connection

4.6.2 Reading Controller Information

Example 1 : Controller and SMS-100 Offline.

Sender : Key in the following character string in the message column and press send.

" +STS= "

SMS-100 : After SMS-100 received and processed the command, it will respond with a message to confirm the command result. If user receives the following message, it means the SMS-100 fails to communicate with controller and only re-alarm interval setting is provided (10minutes).

“ SMS : +STM=10:00, ECU communication failure! ”

Example 2 : Obtaining controller information.

Sender : Key in the following character string in the message column and press send.

“ STS= ”

SMS-100 : After SMS-100 received and processed the command, it will respond with a message to confirm the command result. If user receives the following message, the status of controller is obtain and displayed successfully.

“SMS : +STM=10:00, DCV=23.3V, ECU normal operation”

Description :

- (1) +STM=10:00
Re-alarm interval = 10 minutes
- (2) DCV=23.3V
Battery DC voltage = 23.3V
- (3) ECU normal operation
SMS-100 & controller is communicating normally

4.7 GPRS IP Setting and Establishing Connection

Through the SMS command users is able to setup the IP address for the GPRS connection or to start the GPRS connection.

4.7.1 GPRS IP Setting Format

<pswd>+IP=<string>

The SMS-100 Response message pack and format:

- (1) SMS : password error!
- (2) SMS : command format error!
- (3) SMS : +IP command accepted
- (4) SMS : +IP command failure!

Description :

<pswd> : Password (Factory preset password : 1234)

<string> : Server IP address

4.7.2 GPRS IP Setting Example

Sender : Key in the following character string in the message column and press send.

“ 1234+IP=192.168.155.237 ”

SMS-100 : After SMS-100 received and processed the command, it will respond with a message to confirm the command result. If user receives the following message, it means the IP setting is successful.

“ SMS : +IP command accepted ”

4.7.3 GPRS Establish Connection

<pswd>+IP=GO

The SMS-100 Response message pack and format:

- (1) SMS : password error!
- (2) SMS : command format error!
- (3) SMS : +IP command failure!
- (4) SMS : +IP GPRS connecting

Description :

<pswd> : Password (Factory preset password : 1234)

NOTE

When SMS-100 activates GPRS connection, it is a dynamic IP. Therefore user must first execute the GPRS Server software on the PC prior to exercising message command to begin GPRS connection.

4.7.4 GPRS Establish Connection Example

Sender : Key in the following character string in the message column and press send.

“ 1234+IP=GO ”

SMS-100 : After SMS-100 received and processed the command, it will respond with a message to confirm the command result. If user receives the following message, then the SMS-100 is at the stage of transforming from SMS mode into GPRS mode.

“ SMS : +IP GPRS connecting ”

NOTE

After disconnecting from GPRS or connection failure, SMS-100 automatically change back to SMS messenger mode.

4.8 GPRS APN Setting (Access Point Name)

4.8.1 GPRS APN Set up

<pswd>+APN=<string>

The SMS-100 Response message pack and format:

- (1) SMS : password error!
- (2) SMS : command format error!
- (3) SMS : +APN command accepted
- (4) SMS : +APN command failure!

Description :

<pswd> : Password (Factory preset password : 1234)

<string> : APN name (Maximum of 64 characters)

4.8.2 GPRS APN Set up Example

Sender : Key in the following character string in the message column and press send.

“ 1234+APN=INTERNET ”

SMS-100 : After SMS-100 received and processed the command, it will respond with a message to confirm the command result. If user receives the following message, then the APN name setting is successful.

“ SMS : +APN command accepted ”

SECTION 5 : FACTORY SETTING

5.1 SMS-100 Parameter Configurations

RS485 Slave Address : 06

RS485 Baud Rate : 38400,n81

Controller : GCU-100

Warning Message Mode : English

Re-alarm Warning Message Interval : 600secs

GPRS IP : 211.22.199.134

GPRS APN : INTERNET

GPRS Login Password : Not Set

GPRS Login User Name : Not Set

GPRS password for controller configuration modification : Not Set

PS : The default APN is “INTERNET”, with no username and password. Please contact with your local GSM provider to get the APN.

5.2 Controller Warning Message Description

The SMS-100 factory built-in controller warning messages are stored in English, but when user connects SMS-100 to the PC and execute the SMS-100 Setup software, it will automatically update the language and fonts to the same with the windows operating system.

The description of the controller's warning message stored in the SMS-100 must be consistent to the connected controller's built-in warning messages. Otherwise the user will not be able to interpret the correct meaning of the received warning message.

AMF-10	
<index>	Warning Message
1	Emergency Over Voltage Warning
2	Emergency Under Voltage Warning
3	Low Fuel Warning
4	EX1 Action Warning
5	EX2 Action Warning
6	Under Speed Warning
7	Overload Warning
8	DC Voltage Abnormal Warning
9	Engine Maintenance Service
10	Source Transfer Failure Warning
11	Emergency Transfer Failure Warning
12	
13	
14	
15	
16	AMF10 Off Line
17	Emergency Over Voltage Alarm
18	Emergency Under Voltage Alarm
19	Low Fuel Alarm
20	EX1 Active Alarm
21	EX2 Active Alarm
22	Lower Speed Alarm
23	Over Speed Alarm
24	Low Oil Pressure Alarm
25	High Temperature Alarm
26	Emergency Stop
27	Engine Over Cranking
28	Overload Alarm
29	Source Over Voltage
30	Source Under Voltage
31	Source OFF
32	Emergency OFF

GCU-100	
<index>	Warning Message
1	Emergency Over Voltage Warning
2	Emergency Under Voltage Warning
3	Low Fuel Warning
4	EX1 Action Warning
5	EX2 Action Warning
6	Under Speed Warning
7	Overload Warning
8	MPU Failure Warning
9	Charge Motor Failure Warning
10	DC Voltage Abnormal Warning
11	Engine Maintenance Service
12	
13	
14	
15	
16	GCU100 Off Line
17	Source Over Voltage Alarm
18	Source Under Voltage Alarm
19	Low Fuel Alarm
20	EX1 Active Alarm
21	EX2 Active Alarm
22	Under Speed Alarm
23	Overload Alarm
24	MPU Failure Alarm
25	Charge Motor Failure Alarm
26	Low Oil Pressure Failure Alarm
27	High Temperature Alarm
28	Over Speed Alarm
29	Engine Over Cranking
30	Emergency Stop
31	
32	
33	Phase AC(L12) Abnormal Warning
34	Phase AC(L23) Abnormal Warning
35	Phase AC(L31) Abnormal Warning
36	Phase Load Current(L1) Abnormal Warning
37	Phase Load Current(L2) Abnormal Warning
38	Phase Load Current(L3) Abnormal Warning
39	
40	

GCU-3000	
<index>	Warning Message
1	Over Speed Alarm
2	Under Speed Alarm
3	MPU Failure Alarm
4	Temperature Sensor Failure
5	Oil Pressure Sensor Failure
6	High Temperature Alarm
7	AC Over Voltage Alarm
8	AC Under Voltage Alarm
9	Overload Alarm
10	EX1 Alarm Active
11	EX2 Alarm Active
12	Engine Over Cranking
13	Low Oil Pressure Alarm
14	Emergency Shutdown
15	Low Fuel Alarm
16	
17	Low Oil Pressure Warning
18	High Temperature Warning
19	AC Over Voltage Warning
20	AC Under Voltage Warning
21	Overload Warning
22	DC Voltage Abnormal Warning
23	Oil Pressure Sensor Failure Warning
24	Temperature Sensor Failure Warning
25	Low Fuel Warning
26	EX1 Action Warning
27	EX2 Action Warning
28	Engine Maintenance Service
29	
30	
31	
32	GCU3000 Off Line

ATS-22	
<index>	Warning Message
1	
2	Source Over Voltage
3	Source Under Voltage
4	Source Over Speed
5	Source Under Speed
6	Source Transfer Failure
7	
8	
9	
10	Emergency Over Voltage
11	Emergency Under Voltage
12	Emergency Over Speed
13	Emergency Under Speed
14	Emergency Transfer Failure
15	
16	
17	
18	ATS-22 Off Line

ATS-34	
<index>	Warning Message
1	
2	G1 Over Voltage
3	G1 Under Voltage
4	G1 Over Speed
5	G1 Under Speed
6	G1 Over Cranking
7	G1 Transfer Failure
8	G1 Voltage Unstable
9	
10	G2 Over Voltage
11	G2 Under Voltage
12	G2 Over Speed
13	G2 Under Speed
14	G2 Over Cranking
15	G2 Transfer Failure
16	G2 Voltage Unstable
17	G1/G2 Power OFF
18	ATS-34 Off Line

ATS-33	
<index>	Warning Message
1	
2	G1 Over Voltage
3	G1 Under Voltage
4	G1 Over Speed
5	G1 Under Speed
6	G1 Over Cranking
7	G1 Transfer Failure
8	G1 Voltage Unstable
9	
10	G2 Over Voltage
11	G2 Under Voltage
12	G2 Over Speed
13	G2 Under Speed
14	G2 Over Cranking
15	G2 Transfer Failure
16	G2 Voltage Unstable
17	G1/G2 Power OFF
18	ATS-33 Off Line

ATS-PLC	
<index>	Warning Message
1	
2	Source Over Voltage
3	Source Under Voltage
4	Source Over Speed
5	Source Under Speed
6	Source Transfer Failure
7	Source Power TRIP
8	Source Reverse Phase Sequence
9	
10	Emergency Over Voltage
11	Emergency Under Voltage
12	Emergency Over Speed
13	Emergency Under Speed
14	Emergency Transfer Failure
15	Emergency Power TRIP
16	Emergency Reverse Phase Sequence
17	
18	ATS-PLC Off Line

SECTION 6 : TROUBLESHOOTING

When SMS-100 detects an error, it will incorporate both the built-in 3 color LED indicator and GSM signal strength indicator together to display the corresponding failure and operating status to help user in identifying the problem and facilitate troubleshooting.

Common failures are usually caused by incorrect parameter configuration. In most cases, user can easily resolve the problem by connecting the SMS-100 to the PC and execute SMS-100 setup software to reprogram with correct parameters to resume operation.

SIGNAL STRENGTH	DATA	DESCRIPTION	TROUBLESHOOTING
		Strong Signal Quality	
	+ ●	System Initializing	
	+ ●	GSM initializing and registering to network	
	+ ●	System memory failure	Please contact with dealer or Kutai Electronics.
	+ ●	Incorrect PIN code entered or SIM card missing.	(1) Incorrect SIM card password entered in the SMS-100 configuration (4 digits). Re-enter / Reset SIM card PIN code or close the SIM card password verification option. (2) SIM card not installed or not properly installed. Check if SIM card is available or re-insert the SIM card.
	+ ●	PIN code registration failure	The SIM card PIN code / Password entered in the SMS-100 configuration are inconsistent to the registered PIN code on the SIM card. Check with carriers and enter the correct PIN code in the SMS-100 configuration. Note : After 3 failure registrations, the SIM card will automatically lock registry.
	+ ●	Network log in failure	The SMS-100 has successfully located the carrier's registry, but due to poor GSM signal, unable to complete the registry. Relocate the antenna for better signal or reboot to re-register.
	+ ●	ECU/GCU Offline	Check and confirm if the RS485 connector and wiring is properly connected and if the KCU-02 installed on the ECU / GCU is operating correctly.
	+ ●	GSM Module Offline	Reboot system and if the failure re-occurs, please contact with dealer or Kutai Electronics.

SIGNAL STRENGTH	DATA	DESCRIPTION	TROUBLESHOOTING
	+ 	System code check error	The system program has been corrupted, please contact with dealer or Kutai Electronics.
	+ 	RS485 configuration setup error or no setting	Inconsistent RS485 parameter configuration between SMS-100 and ECU / GCU controller. The user must first check and confirm whether the RS485 slave address and baud rate setting of the controller is set correctly, then check the SMS-100 RS485 slave address and baud rate setting is consistent with the controller's setting.
	+ 	ECU / GCU controller selection not matched	Incorrect controller model selected in the SMS-100 configuration. Check for correct model of controller connected and reconfigure.
		PC connected (USB)	Startup SMS-100 Setup operation software.
		Transmitting / Receiving ECU / GCU data	
		Transmitting / Receiving GSM module data	