GREE
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# GREE USB DATA CONVERTER

Owner's Manual

Commercial Air Conditioners

Thank you for choosing Commercial Air Conditioners, please read this owner’s manual carefully before operation and retain it for future reference.

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## 1. Brief Introduction

GREE USB data converter is developed for data exchange between CAN/HBS/RS485 protocol and USB protocol, baud rate setting, and memory function in case of power failure, so as to guarantee the normal data exchanger between PC and the air conditioning unit.

## 2. Structural Drawing

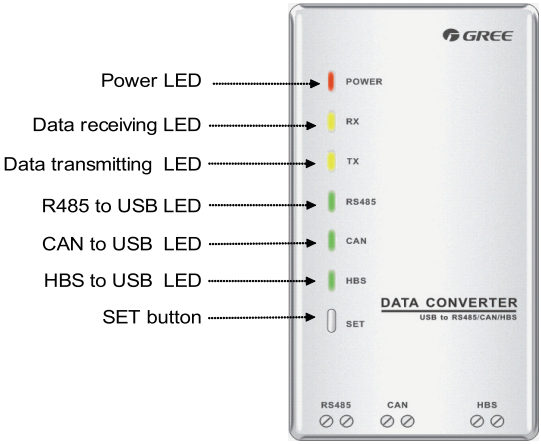



Fig.1 Front View of the Data Converter

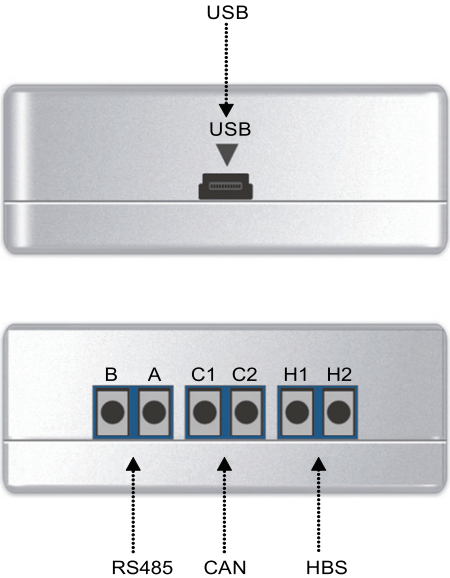



Fig.2 Interfaces of the Data Converter

# 3. Operation Instructions

## 3.1 Communication Interfaces

### 3.1.1 USB Interface

As shown in Fig.2, the USB interface can be used with the data line either provided by GREE or others.

### 3.1.2 CAN Interface

As shown in Fig.2, under the CAN communication mode, this non-polar interface is connected with the corresponding CAN interface on the air conditioning unit.

### 3.13 HBS Interface

As shown in Fig.2, under the HBS communication mode, this non-polar interface is connected with the corresponding HBS interface on the air conditioning unit.

### 3.1.4 RS485 Interface

As shown in Fig.2, under the RS485 communication mode, this non-polar interface is connected with the corresponding RS485 interface on the air conditioning unit.

## 3.2 Indicating LEDs

### 3.2.1 Power LED

As shown in Fig.1, the red LED is the power indicating LED. When the LED lights on, it indicates the data converter is energized normally; when the LED lights off, it indicates the data converter is not energized or energized improperly.

### 3.2.2 Data Receiving/Transmitting LEDs

As shown in Fig.1, two yellow LEDs are the data receiving (RX) and data transmitting (TX) indicating LEDs respectively. When the PC is transmitting data to the air conditioning unit, the TX LED will flash, when the air conditioning unit is transmitting data to PC, the RX LED will flash.

### 3.2.3 RS485/CAN/HBS to USB LEDs

As shown in Fig.1, three green LEDs are the communication mode indicating LEDs.

(1) When RS485 to USB LED lights on, it indicates that the data converter functions under the RS45 communication mode.

(2) When CAN to USB LED lights on, it indicates that the data converter functions under the RS45 communication mode.

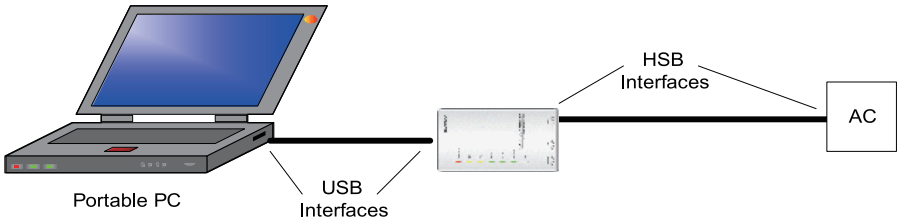
(3) When HBS to USB LED lights on, it indicates that the data converter functions under the HBS communication mode.

## 3.3 Supporting Operation System

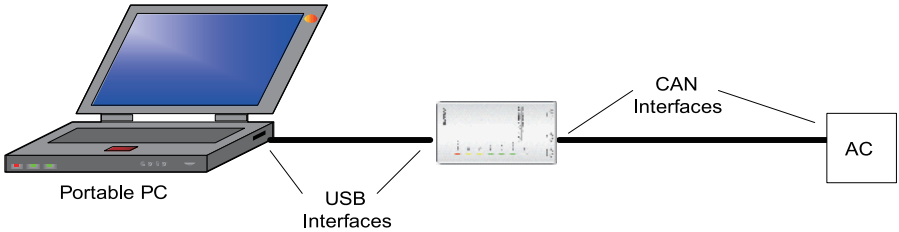
The data converter supports Windows XP, Windows 7, Windows Vista, Windows Server 2003, and Windows Server 2008.

## 3.4 Connection under Each Communication Mode

### 3.4.1 HBS Communication




### 3.4.2 CAN Communication



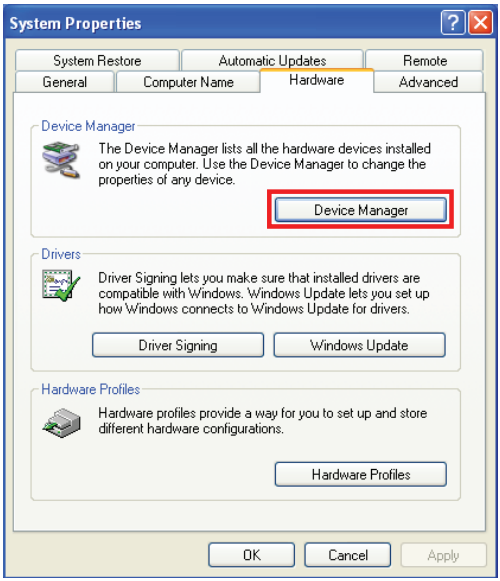

### 3.4.3 RS485 Communication

### 3.4.4 Operation Instructions

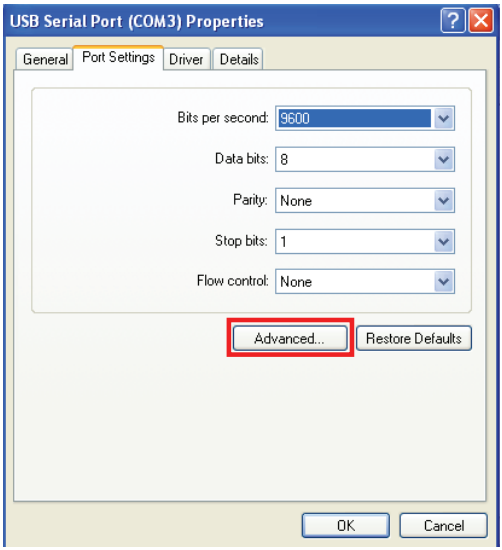
When the GREE USB converter is used for the first time on your computer, please make sure the serial enumerator has been turned off to prevent the USB data converter from being identified incorrectly by your computer and thus affecting the normal operation of the mouse, or please go to the Device Manager to find out the applicable serial port and turn off the serial enumerator as stated below.

Operation Steps

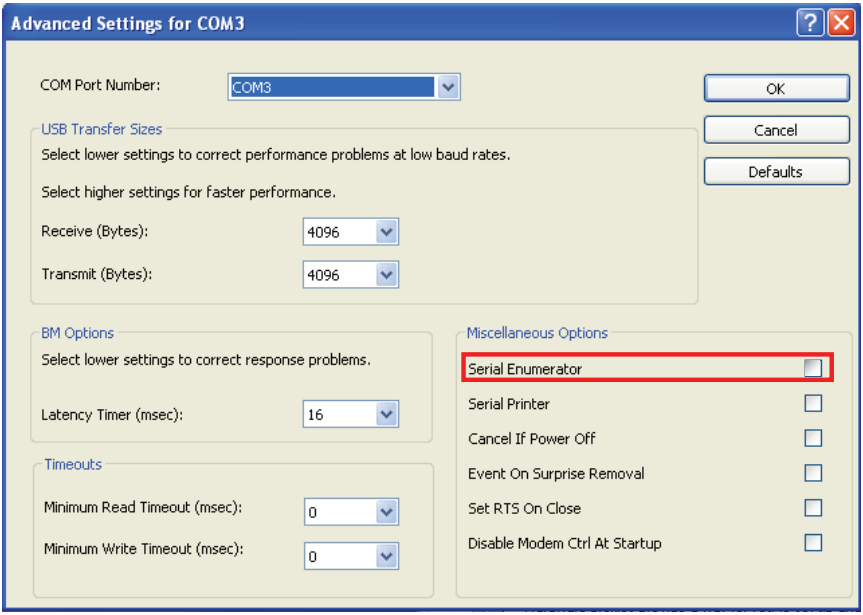
Step 1: go to the Device Manager




Step 2: go to the Port Settings



Step 3: go to the Advanced Settings of Port Settings




## 3.5 Setting of the Data Converter

When the data converter is operating, by pressing the “SET” button briefly, the communication modes can be switched among HBS, CAN and RS485, with the corresponding LED lighting on.

The baud rate of HBS, CAN, or RS485 interface is kept the same as that used last time.

Note: The data converter driver contained in the CD packaged together with the data converter should be installed before the data converter can be used normally.

## 3.6 Setting of the Baud Rate

Baud rates for different interfaces are listed in the tables below (the baud rates of the AC interface and USB interface can match up automatically.)

Factory-set Baud Rate (unit: bps)

| AC Interface | AC Interface Baud Rate | USB Interface Baud Rate |
|---|---|---|
| CAN | 20000 /50000(self-adaptive) | 115200 |
| HBS | 57600 | 38400 |
| RS485 | 9600 | 9600 |

RS485 Interface Baud Rate (unit: bps)

| RS485 Interface | 4800 | 9600 | 19200 | 38400 | 57600 | 115200 |
|---|---|---|---|---|---|---|
| USB Interface | 4800 | 9600 | 19200 | 38400 | 57600 | 115200 |

HBS Interface Baud Rate (unit: bps)

| | | | | |
|---|---|---|---|---|
| HBS Interface | 9600 | 19200 | 38400 | 57600 |
| USB Interface | 4800 | 9600 | 19200 | 38400 |

CAN Interface Baud Rate (unit: bps)

| | | | | |
|---|---|---|---|---|
| CAN Interface | 20000 | 50000 | 100000 | 125000 |
| USB Interface | 115200 | 115200 | 256000 | 256000 |

## 3 6.1 Setting the Baud Rate

At first, it is necessary to enter the setting status. When the data converter is operating, press the “SET” button for 5 seconds and then the communication mode indicating LED lights on, which indicates it is the right time to:

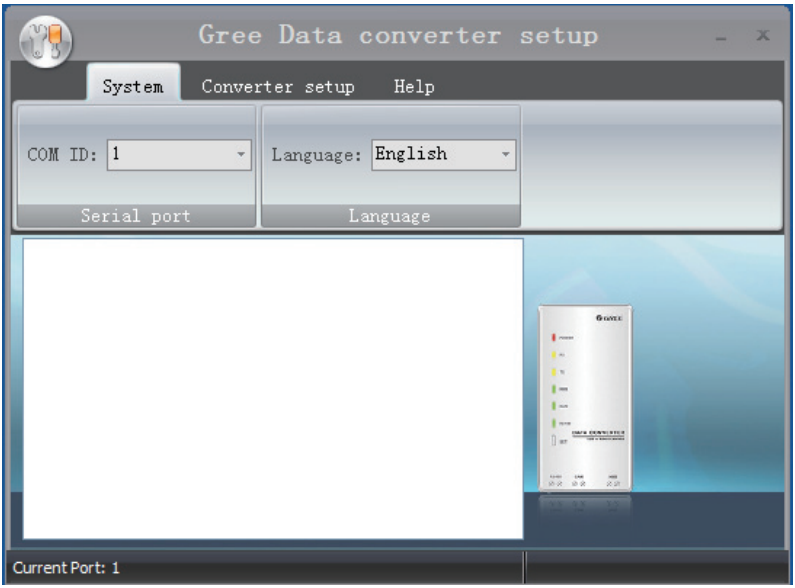
(1) set the baud rate through the data converter setup software

(2) set the baud rate through the PC hyper terminal.

After that, press the “SET” button briefly to make the data converter back to the normal status.

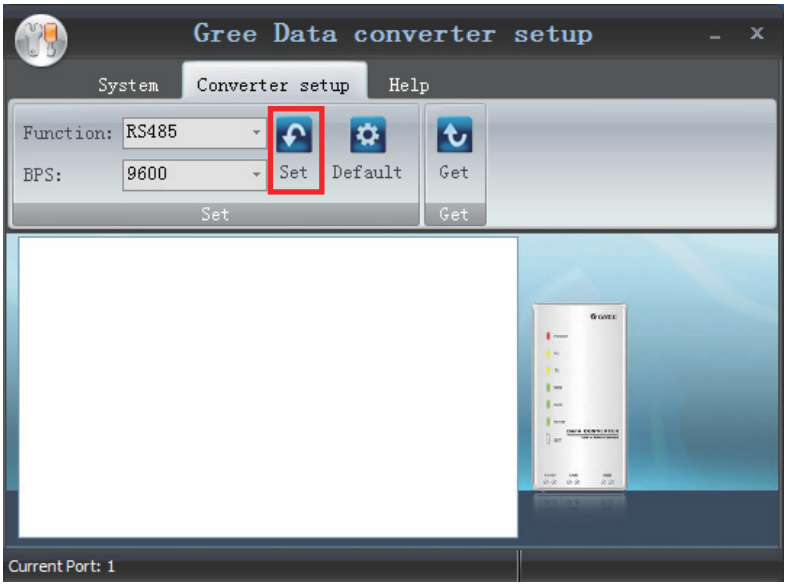
### 3.6.1.1 Setting of the Baud Rate through the Data Converter Setup Software

(1) Selecting the Serial Port



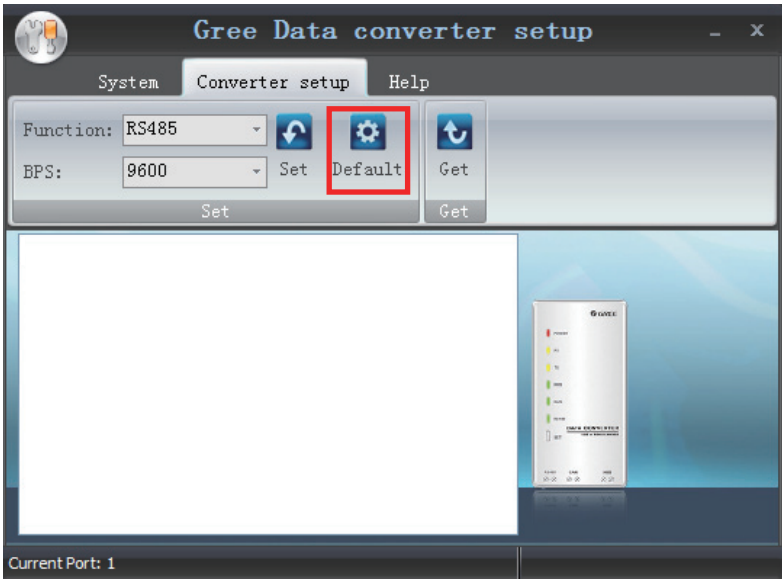
(2) Setting the Baud Rate

Select the desired communication mode and set its baud rate, and then click “Set”.



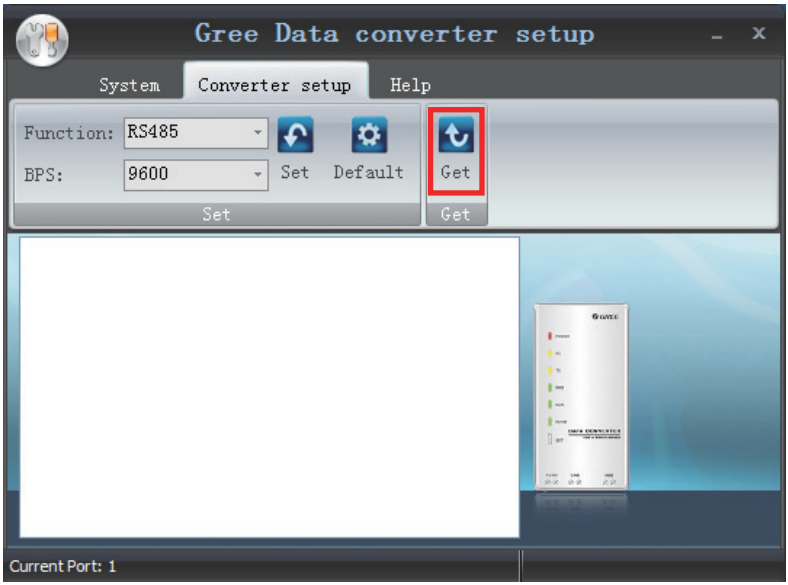

(3) Restoring to the Default Setting

Click “Default” to restore to the default baud rate setting.

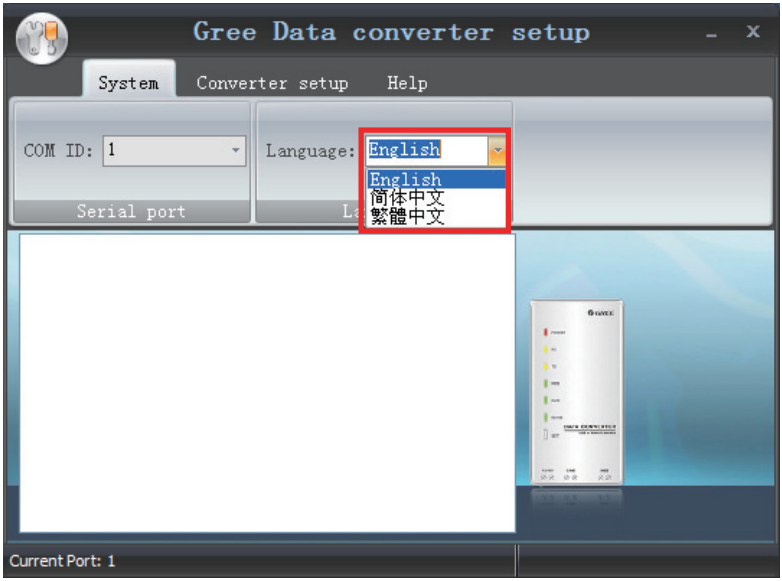


(4) Getting the Current Setting

Click “Get” to get the current setting of the data converter.




(5) Switchover of Software Languages



3.6.2.2 Setting of the Baud Rate through the PC Hyper Terminal

(1) Access to the PC hyper terminal

(2) Set the PC hyper terminal as stated below.

a. Select the communication port for the PC and data converter.

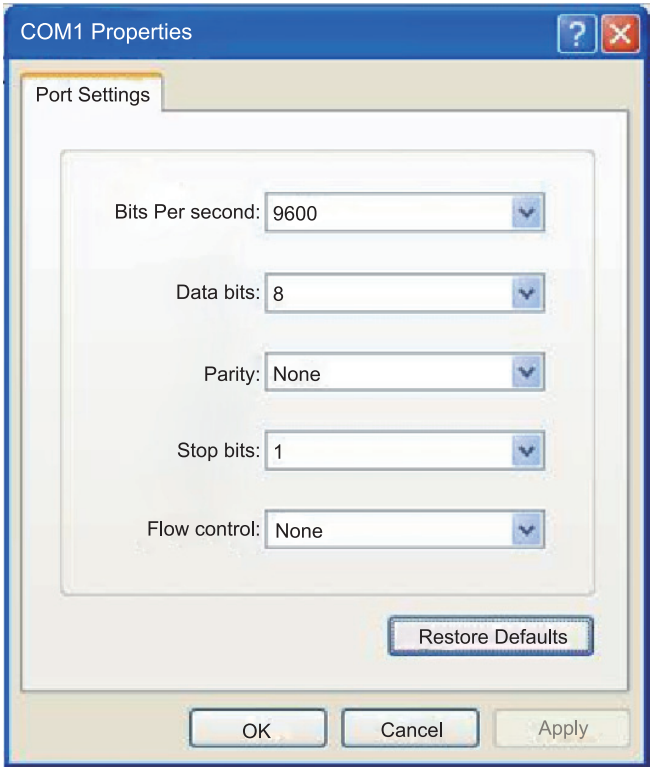
b. Set the baud rate to “9600”

c. Set the data bit to “8”.

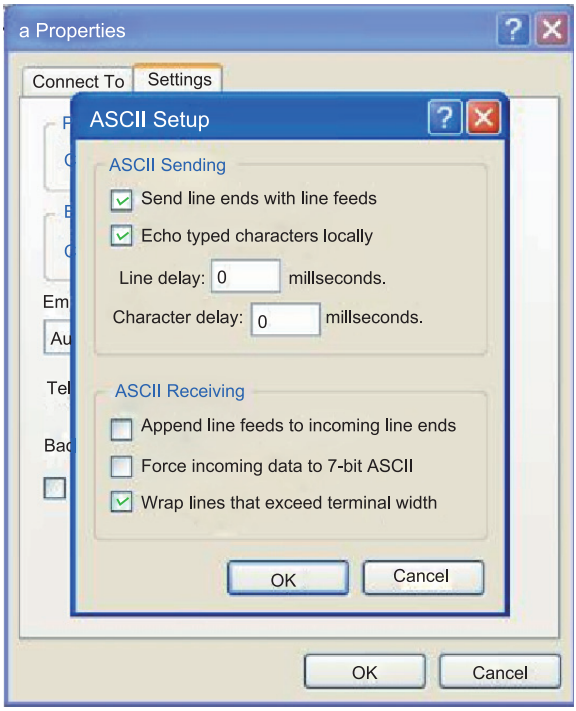
d. Set the parity check code to “None”.

e. Set the stop bit to “1”.

f. Set the transmit flow control to “None”.”



(3) Access to the ASCII setting window through the path: File→Properties→Settings→ASCII Setup, and then tick off the options as shown in the figure below.




(4) Apply the Command 3 covered in the Appendix A, Commands Table to set the baud rate

(5) Apply the Command 6 covered in the Appendix A, Commands Table to exit this setting.

### 3.6.2 Restoring to the Default Baud Rate through the Press Button

When the data converter is operating, press the “SET” button for 5 seconds to go to the setting status, with the communication mode indicating LED lighting on, and then press the “SET” button again also for 5 seconds to make the baud rate restore to the default setting.

## 3.7 Viewing Data

### 3.7.1 Before Operation

(1) Be sure the data converter driver is installed.

(2) Properly connect the data converter with the PC and air conditioning unit respectively with the data line.

(3) Set the communication mode (CAN, HBS or RS485) and baud rate.

(4) Check the data converter’s serial port identified by the PC.

### 3.7.2 How to View Data

(1) View data through the GREE commissioning software.

(2) View data through the series port commissioning software (prepared by the user).

# 4. Precautions

(1) The data converter driver which is contained in the CD packaged together with the data converter should be installed before the data converter can be used normally.

(2) When the data converter is operating, deactivate the series port before unplugging the USB data line, otherwise the series port would fail to be normally activated in future.

(3) Under the RS485 communication mode, be sure the communication line is placed at the correct port, otherwise normal communication would fail.

(4) It is warned that the data converter could function improperly beyond the working condition aforementioned.

(5) GREE reserves the right to update the product without advanced notice.

# Appendix A: Commands Table

## 1 Command for Reading the Baud Rate

This command is intended to read the baud rate of the data converter.

| | | |
|---|---|---|
| Command | AT+READ?\r\n | OK |
| Response | +READ:\r\n\”Current Function:RS485”,”RS485=9600 bps”,”Serial port baud rate=9600 bps”,”CAN STATUS=AUTO”,”CAN=20000\50000bps”,“Serial port baud rate=115200 bps”,”HBS=57600 bps”,”Serial port baud rate=38400 bps”\r\n<br>OK\r\n | OK |
| | +READ:\r\n\”Current Function:RS485”,”RS485=9600 bps”,”Serial port baud rate=9600 bps”,”CAN STATUS=NO AUTO”,”CAN=20000 bps”,“Serial port baud rate=115200 bps”,”HBS=57600 bps”,”Serial port baud rate=38400 bps”\r\n<br>OK\r\n | |
| | ERROR\r\n | ERROR |

## 2 Command for Reading Commands and Version Info

This command is intended to read all usable commands and version info of the data converter.

| | | |
|---|---|---|
| Command | AT+HELP?\r\n | |
| Response | +HELP:\r\n"Current Version : 1.0"\r\n<br>1."AT+READ?"\r\n<br>2."AT+HELP?"\r\n<br>3."AT+CANAUTO"\r\n<br>4."AT+DEFAULT"\r\n<br>5."AT+RS485=4800\9600\19200\38400\57600\115200"\r\n<br>6."AT+CAN=20000\50000\100000\125000"\r\n<br>7."AT+HBS=9600\19200\38400\57600"\r\n<br>OK\r\n | OK |
| | ERROR\r\n | ERROR |

## 3 Command for Setting the Baud Rate

### 3.1 This command is intended to set the baud rate of the RS485 interface

| | | |
|---|---|---|
| Command | AT+RS485=9600\r\n | |
| Response | Serial port baud rate=9600\r\n<br>OK\r\n | OK |
| | ERROR\r\n | ERROR |

### 3.2 This command is intended to set the baud rate of the CAN interface.

| | | |
|---|---|---|
| Command | AT+CAN=20000\r\n | |
| Response | Serial port baudrate=115200\r\n<br>OK\r\n | OK |
| | ERROR\r\n | ERROR |

### 3.3 This command is intended to set the baud rate of the HBS interface

| | | |
|---|---|---|
| Command | AT+HBS=9600\r\n | |
| Response | Serial port baud rate=4800\r\n<br>OK\r\n | OK |
| | ERROR\r\n | ERROR |

## 4 Command for Restoring to the Default Baud Rate

| | | |
|---|---|---|
| Command | AT+DEFAULT\r\n | |
| Response | +DEFAULT:\r\n\"Current Function:RS485”,”RS485=9600 bps”,”Serial port baud rate=9600 bps”,”CAN STATUS=AUTO”,”CAN=2000 0\50000bps”,“Serial port baud rate=115200 bps”,”HBS=57600 bps”,”Serial port baud rate=38400 bps”\r\n<br>OK\r\n | OK |
| | ERROR\r\n | ERROR |

## 5 Command for Exiting the Setting

| | | |
|---|---|---|
| Command | AT+Exit\r\n | |
| Response | OK\r\n | OK |
| | ERROR\r\n | ERROR |

## 6 Command for Self Adapting the CAN Baud Rate

| | | |
|---|---|---|
| Command | AT+CANAUTO\r\n | |
| Response | OK\r\n | OK |
| | ERROR\r\n | ERROR |

# Appendix B: Marking Description

| **CE Marking** | |
|---|---|
| | CE Marking on a product is a manufachmer's declaration that the product complies with the essential requirements of the relevant European health, safety and enviromnental protection legislation,in practice by many of the so-called Product Directives. |
| **Correct Disposal of this product** | |
| | This marking indicates that this product should not be disposed with other household wastes throughout the EU. To prevent possible harm to the environment or human health from uncontrolled waste disposal,recycle it responsibly to promote the sustainable reuse of material resources. To return your used device,please use the return and collection systems or contact the retailer where the product was purchased. They can take this product for environmental safe recycling. |

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