MANUAL

MODEL **1311**

HANDHELD PROGRAMMER

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1 INTRODUCTION

The Curtis Model 1311 Handheld Programmer simplifies programming, testing and diagnosing Curtis Speed Controllers and Auxiliary Devices. It provides a simple and intuitive interface to Curtis products for testing, diagnostics and parameter adjustments.

1.1 Features

- Compatible with Curtis speed controllers and auxiliary devices.
- Backward compatible to the Curtis Model 1307 Programmer.
- Intuitive and simple Menu navigation.
- Inc/dec Key for real-time adjustment of parameters.
- Read and clear diagnostic history, monitor real-time data and perform tests.
- Menu and SubMenu structure provide a clear organization of parameters.
- Bookmark Keys provide fast swapping between three user selected Menus.
- Detail screens show units, min/max ranges and bar graph.
- Allows cloning of data between controllers.
- Graphic LCD can display up to seven lines of information.
- Restricted data is controlled by four access levels; OEM, Dealer, Service and User.
- Cable options to interface with all Curtis controllers; Molex, Conxall and RJ11.

1.2 Model Variants

Model 1311 Handheld Programmer is offered in four access level models:

- 1311-1101 User programmer
  (most restrictive programmer; limited view into the system and a limited number of parameters and operations)
- 1311-2201 Service programmer
- 1311-3301 Dealer programmer
- 1311-4401 OEM programmer
  (the broadest access to parameters and system values).

In order to connect the 1311 Programmer to a Curtis product, one of three cables must be attached:

- Conxall for the 1288 and MC-2 product line
- RJ11 for the 1207 motor controller
- Molex for all other Curtis products, including 1207A

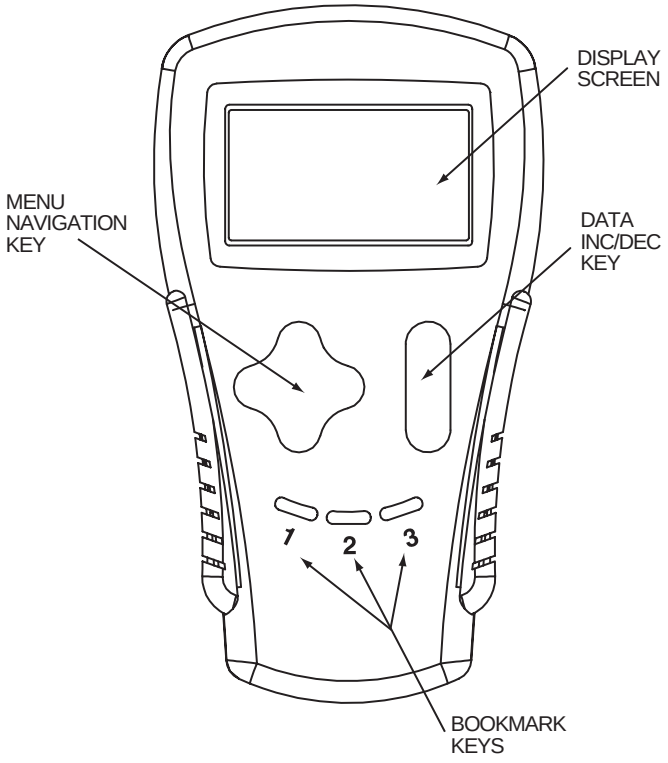
Each cable must be ordered separately.

1.3 Specifications

Operating Ambient Temperature	-10°C to 50°C
Storage Temperature	- 40°C to 70°C
Environmental Protection	IP20
Weight	0.4 Kg

Plug the 1311 into a Curtis programmer port only. Voltages and other interface circuits can result in permanent damage to the programmer !

2 OVERVIEW


DISPLAY
SCREEN
MENU
NAVIGATION
KEY
DATA
INC/DEC
KEY
1
2
3
BOOKMARK
KEYS

2.1 Display Screen

A 128 x 64 pixel graphic LCD screen capable of displaying up to seven lines of text and graphic images simultaneously.

2.2 Menu Navigation Key

Moves the screen cursor up or down through the Menu list (top or bottom arrow), and opens or closes Sub Menus (right and left arrows).

2.3 Data Inc/Dec Key

Changes the value of the parameter indicated by the cursor.

2.4 Bookmark Keys

The three Bookmark Keys allow you to quickly go back to your favorite selections without having to navigate back through the Menu.

To set a position in the Menu, hold a Bookmark Key down for four seconds, until the Bookmark set screen will be displayed.

To jump to a selected Bookmark position, press the appropriate Bookmark Key.

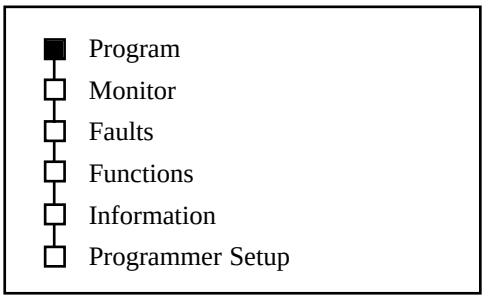
The Bookmarks are not permanently stored in the 1311. They are cleared when the programmer is unplugged.

3 OPERATION

3.1 Menu Structure

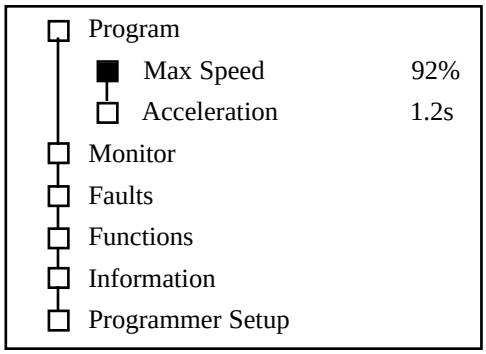
After the data is uploaded from the unit (controller, charger, etc), the Main Menu appears. This is the standard Menu for all Curtis products and the starting point for all basic programmer functions. If there are no entries within a Menu, then that Menu title (Program, Monitor etc) will not be displayed.

The Main Menu looks like this:

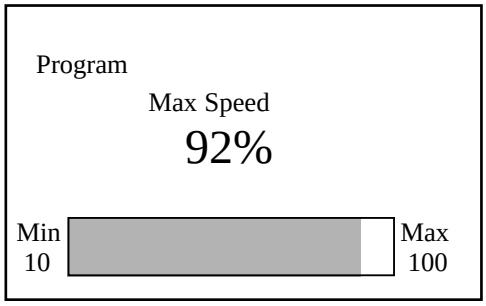


A blinking square on the left edge indicates the position of the cursor. You are at the top-level Menu so only one column of boxes (cursor positions) exist. As you go deeper into the Menu structure (using the four-directional Menu Navigation Key) additional columns will be shown.

Entering a Main Menu (right arrow on the Menu Navigation Key) brings up a Sub-Menu, displayed in a second column and indented right.



From the Program Menu you can go one additional SubMenu deeper into the detail screen. Press the right arrow Menu Navigation Key again and a screen with additional information and bar graph will appear.



You can back out of this screen and the Sub-Menus (there can be more than one Sub level) by pressing the left arrow on the Menu Navigation Key.

3.2 Main Menu

The Main Menu is the starting point for all Curtis programmable products. All basic functions are readily accessed from this point.

Program

The Program Menu may contain several Sub-Menus of parameters. The unit (controller, charger, display, etc) is setup with specific operating conditions using the 1311 handheld programmer in this Menu. Items like max speed, current limits, timeouts, and modes are common parameters set in the Program Menu.

Monitor

The Monitor contains a list of all the variables that can be read and displayed. Common items are battery voltage, throttle position, input status and temperature. If the list is too long, Sub-Menus may be used to categorize them.

Faults

The Faults Menu provides the present status and access to past fault history.

Functions

The 1311 handheld programmer can also be used to copy data between units, reset data and many other functions unique to the unit. The Functions Menu provides access to these.

Information

When the unit is connected to the 1311 handheld programmer, information, such as software, hardware and parameter block versions are also uploaded. The Information Menu provides a quick overview.

Programmer Setup

There are several setup options and information that can be accessed in this Menu.

3.3 Interface Protocols and backward compatibility

Model 1311 has several protocols to communicate with other Curtis products. It automatically detects the correct protocol and begins the data upload immediately upon power up. (It is critical that the correct cable is used).

Model 1311 Handheld Programmer also emulates the communication of the 1307 handheld programmer. 1311 is backward compatible with products like 1207, 1223 and other products designed to communicate with model 1307. The 1307 protocol does not support Sub-Menus.

1307 backward compatibility is provided using the same Main Menu structure as all other 1311 protocols. The 1307 had special Keys labeled PROGRAM, TEST and DIAGNOSTICS, which are accessed under the Program, Monitor and Faults 1311 Menus. The 1307 MORE INFO is similar to the 1311 detail screen and Functions Menu. Changing the data and scrolling through the list is similar between the 1311 and the 1307.

3.4 Changing a parameter

Many Curtis products allow customization to meet designer or user preferences. The parameters that are made available to the OEM, dealer, service technician or end-user, are controlled by the 1311 access level (see section 1.3 Model variants). Not every parameter is visible to every user.

When the 1311 is connected to a Curtis product, a parameter list (block) is uploaded to the programmer along with the present settings. You can easily scroll through this list and change the settings and quickly test the results. To access a parameter, use the Menu Navigation Key to select

'Program'

Sub-Menus organize the parameter list. Scroll though the list and press the right arrow on the Menu Navigation Key to enter the Sub-Menu.

When a parameter is displayed, its value and units (abbreviated) will be displayed on the right of the screen. You can change the value of the parameter by using the Data Inc/Dec Key. Alternately, you can press the right arrow Menu Navigation Key once more and enter the detail screen (see section 3.1 Menu Structure for more details). A bar graph appears as well as min and max data points. Change the parameter value by pressing the Data Inc/Dec Key (the bar graph shows the relative value of the parameter)

1311 automatically sends the change to the unit. The new value is set as soon as the Data Inc/Dec Key is released.

Test the system at any time, even with the unit active.

To close a Menu, Sub-Menu or detail screen, press the left arrow on the Navigation Key.

3.5 Real-time monitoring

To aid installation, service and troubleshooting, the 1311 Handheld Programmer can request and display a variety of real-time data from the Curtis unit. Each Curtis product has its own list of items that can be displayed. This list is found under the Main Menu heading

'Monitor'

Use the right arrow on the Menu Navigation Key to select the list of monitor variables. If the list is more than one screen long, use the Up and Down Buttons arrows on the Menu Navigation Key to scroll through the list.

In the "list" mode, every value is periodically updated.

To view a single monitor variable at a faster rate, select a single variable from the list (using the right arrow) and a detail screen will display. This screen will show only that variable and the update rate will be faster.

To leave the Monitor Menu or detail screen, press the left arrow on the Navigation Key.

3.6 Reading Faults and the Diagnostic History file

Model 1311 allows access to the present and past status of the system or unit you are connected to. Each Curtis product runs continuous self-diagnostics and will record and log an error event in non-volatile memory. When the 1311 is connected to the unit, this log file is automatically uploaded into the handheld programmer.

To see the present status of the unit, use the Menu Navigation Key to select

'Faults -> System Faults'

To access this log, use the Menu navigation Key to select

'Faults -> Fault History'

The faults are shown as a code and descriptive text. If there are multiple faults, you may have to scroll through the list using the Up and Down Buttons on the Menu Navigation Key.

It is useful to clear the fault history after reading it. To do this, select

'Faults -> Clear Fault History'

You will be asked to confirm your actions. Use the Increment arrow (+) for yes and decrement arrow (-) to cancel and not clear the Fault History.

The MC-2 systems have an additional Sub-Menu to select the module. For example 'Faults -> Controller -> Fault History'.

3.7 Cloning and restoring the previous programming

Cloning is the process of duplicating parameter settings from one unit to others, making copies or "clones". You may only clone units with the same hardware, software and parameter block. You cannot clone the MC-2 or products using the MCP protocol.

The special cloning functions are listed on the programmer in the Menu

'Functions -> Settings'.

From here, you can select

'Get Settings From Controller'

This will upload the data from a unit into the 1311. Or,

'Write Settings To Controller'

This will download the present data stored in the 1311 to the unit.

This process will only work between identical models. Model 1311 will not allow cloning between different models (1228 to 1243) nor between similar models (1244-4401 to 1244-4402). Only the data accessible by the 1311 is cloned. For example, a User level 1311 will only clone User level data and will not clone the OEM, Dealer or Service level data.

You may also easily restore the original settings of the unit . Each time the programmer is connected to a unit, it uploads the present data and stores it in a "temporary archive" memory. You can revert back to the original settings any time during a programming session by selecting the Menu

'Functions -> Settings -> Reset All Settings'.

Any inadvertent change of parameters can be 'undone' using this procedure - even if you can't remember what the previous settings were - as long as the programmer has not been un-plugged and power has not been removed from the controller.

3.8 Information Displays

Besides the parameters, values and fault history, each Curtis product contains a small file describing the basic revision level of the product. The Information Menu provides access to that data.

To view the product information, use the Menu Navigation Key to select 'Information' in the Main Menu (remember to press the right arrow to select a Menu). A screen will show the available information. Press the left arrow to exit.

3.9 Programmer Setup

Model 1311 Handheld Programmer itself has a few items that can be viewed, setup and customized to the user's preference. Some useful functions are

'Programmer Setup -> Program -> LCD-Contrast'

Which allows the user to set the desired contrast level for best viewing.

'Programmer Setup -> Information'

Which shows the current revision level of the 1311 handheld Programmer.

CURTIS

CURTIS INSTRUMENTS, INC.

200 Kisco Avenue, MT Kisco, NY 10549
Tel: (914) 666-2971 • FAX (914) 666-2188

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