

HP

**E81100**

Pulse/Pattern Generators

# HP E8311/12A Installation Guide

HP E8311/12A 165/330 MHz Pulse and Pattern Generators

## Notice

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Hewlett-Packard Company certifies that this product met its published specifications at the time of shipment. Hewlett-Packard further certifies that its calibration measurements are traceable to the United States Institute of Standards and Technology, to the extent allowed by the Institute's calibrating facility, and to the calibration facilities of other International Standards Organization members.

## Safety Information

### Safety

For Safety Class 1 instruments (provided with terminal for protective earthing), before applying power, verify that the correct safety precautions are taken (see the following warnings). In addition, note the external markings on the instrument that are described under Safety Symbols. Do not operate the instrument with its covers removed. Replace fuse only with specified type.

### Warning

Before turning on the instrument, you must connect the protective earth terminal of the instrument to the protective earth conductor of the (mains) power cord. The mains plug must only be inserted in a socket outlet with a protective earth contact. Do not negate the protective action by using an extension power cord without a protective grounding conductor. Grounding one conductor of a two-conductor outlet is not sufficient protection.

Service instructions are for trained service personnel. To avoid dangerous electric shock, do not perform any service unless qualified to do so. Do not attempt internal service or adjustment unless another person, capable of rendering first aid and resuscitation, is present.

If you energize this instrument using an auto-transformer (for voltage reduction) make sure that the common terminal is connected to the earth terminal of the power source.

Whenever it is likely that the ground protection is impaired, you must make the instrument inoperative and secure it against any unintended operation.

Do not operate the instrument in the presence of flammable gases or fumes. Operation of any electrical instrument in such an environment constitutes a definite safety hazard.

Do not install substitute parts or perform any unauthorized modification to the instrument.

Capacitors inside the instrument may retain a charge even if the instrument is disconnected from its source of supply.

### Safety Symbols



The instrument is marked with this symbol when it is necessary for you to refer to the instrument specification in order to protect inputs and outputs against damage.



Protected conductor symbol.

In the manuals:

#### WARNING

Warnings call attention to a procedure, practice, or the like, which, if not correctly performed or adhered to, could result in personal injury or loss of life. Do not proceed beyond a Warning until the indicated conditions are fully understood and met.


#### CAUTION

Cautions call attention to a procedure, practice, or the like, which, if not correctly performed or adhered to, could result in damage to or destruction of part or all of the equipment. Do not proceed beyond a Caution until the indicated conditions are fully understood and met.

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# Introducing the HP E8311/12A Pulse and Pattern Generators

# Introducing the HP E8311/12A Pulse and Pattern Generators

The purpose of this introductory chapter is to give a general overview of the HP E8311A and HP8312A VXI instruments.

The main features and methods of use are described in *“What You Can Do with the HP E8311/12A”* on page 7.

The front panels with their inputs and outputs are depicted and described in *“The Front Panels”* on page 8.

For detailed information on how to program the instruments, please refer to the *Quick Start Guide* (pdf file). To view or print this manual, open the Windows *Start* menu and select *Programs – Vxipnp – HPE8311/12A – Quick Start Guide*.

# What You Can Do with the HP E8311/12A

This section introduces the basic features and methods of use of the HP E8311A VXI instrument. Reference is made to the differences between the HP E8311A and the HP E8312A instruments.

## Basic Features

The Pulse and Pattern Generators generate all the standard pulses and digital patterns needed to test all current logic technologies (for example, TTL, CMOS, ECL, PECL, LVDS, GTL) and other digital designs up to 165 MHz with the HP E8311A instrument and up to 330 MHz with the HP E8312A instrument.

The instruments feature two internal oscillators:

- a synchronously triggerable internal oscillator
- an accurate, stable internal PLL

For even more accuracy, an external frequency reference can be connected.

The instruments provide a reliable and wide range of signals. Any timing parameter can be varied without glitch and drop out. This contributes to more accurate and reliable characterizations of the device under test (DUT).

With the HP E8311A the output channels can be used separately or be **added** to form complex signals such as multi-level waveforms (analog channel add).

## Automated Testing

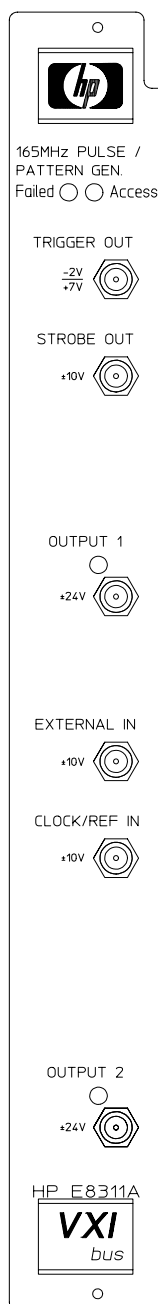
Using the *VXIplug&play* driver commands, the new product can be easily integrated into all phases of test-system development such as planning rack integration and test program generation. These benefits combined with the low cost of ownership make the HP E8311/12A an invaluable instrument for a wide range of technical applications.

# The Front Panels

This section shows the front panels of both HP E8311A and HP E8312A instruments and describes their input and output connectors.

## Front Panel HP E8311A

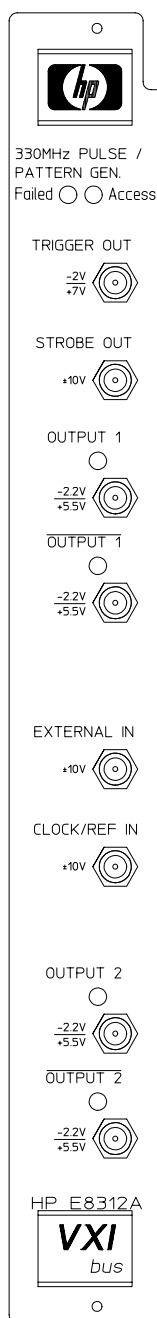
The following figure shows the front panel of the HP E8311A with its input and output connectors.





## Front Panel HP E8312A

The following figure shows the front panel of the HP E8312A with its input and output connectors.



## Inputs and Outputs

The major inputs and outputs of the instruments HP E8311A and HP E8312A are:

(For more details, please refer to “*Using the HP E8311/12A*” in the Quick Start Guide.)

- **EXTERNAL IN**

Can be used to connect an external arming source (triggered or gated modes) and to generate leading and trailing edges (external width mode).

- **CLOCK/REF IN**

Can be used to connect either an external clock signal or a reference signal for the internal PLL if a higher frequency accuracy than 0.01% is required.

- **STROBE OUT**

Is used only in burst and in pattern mode.

- In burst mode the strobe output rises at the start of the first pulse period and falls at the start of the last pulse period.
- In pattern mode the strobe output can be programmed for each bit. You can set the output levels to TTL or ECL.

- **TRIGGER OUT**

Marks the start of each pulse period.

You can set the output levels to TTL or ECL.

- **OUTPUT**

- **HP E8311A:**

The output connectors provide the normal signal output for channel 1 and channel 2.

- **HP E8312A:**

The output connectors provide the normal and inverted signal outputs for channel 1 and channel 2.

## LEDs on the Front Panel

The LEDs on the front panel are:

- “Failed” LED

This red LED is lit during module initialization. If it does not turn off after initialization, please contact your local HP support center.

- “Access” LED

This green LED flashes while the module is accessed by the controller.


### NOTE

If the “Access” LED flashes continuously, for example, flash–flash–flash, pause, flash–flash–flash, pause and so on, please record this error code (number of continuous flashes) and contact your local HP support center.

- LEDs at the outputs

These green LEDs show the current state of the outputs (on or off).





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# Installing the HP E8311/12A

## Installing the HP E8311/12A

The HP E8311/12A are VXI instruments that plug into a VXI mainframe. Installing the instruments requires the following steps:

- 1** *“Selecting a Mainframe Slot” on page 15*
- 2** *“Setting Logical Addresses of the VXI Instruments” on page 16*
- 3** *“Installing the Instrument in the Mainframe” on page 17*
- 4** *“Installing the Software” on page 18*

# Selecting a Mainframe Slot

The first step to install a VXI instrument is to select a free slot in the VXI mainframe. See your Mainframe User's/Service Manual or the VXI Getting Started Guide (available on the CD) for more information.

When you have selected a slot, enter the instrument model number, name, and serial number for the instrument in the VXI Mainframe Overview table. You should maintain such a table for each mainframe in order to keep track of the installed instruments.

Slot	Model Number	Instrument Name	Logical Address	Serial Number
0				
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				

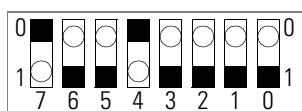
## Setting Logical Addresses of the VXI Instruments

When you have selected the slot for the VXI instrument, the next step is to set the instrument logical address (LADDR) as required. You can generally use the factory-set (default) logical address.

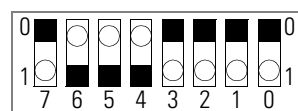
If you need to set another logical address, use the following guidelines (see the applicable Mainframe User's/Service Manual or the VXI Getting Started Guide for more information).

The logical address for each VXI instrument is set by the Logical Address (LADDR) switch on the instrument. The logical address value is the sum of the values of the logical address switches set to the closed position.

The following figure shows the defaults for the HP E8311A (LADDR 111) and the HP E8312A (LADDR 112):



Address Switches set to 111



Address Switches set to 112

After setting the address switches, record the logical address in the VXI Mainframe Overview table.



# Installing the Instrument in the Mainframe

After setting the logical address as required, you can then install the instrument in the mainframe.

- 1 Turn mainframe power off.
- 2 Install the instrument in the slot you previously identified.
- 3 Turn mainframe power on.

## WARNING

In operation the side covers of the instrument may become very hot. Therefore be very careful when you remove the VXI instruments from the mainframe.

## CAUTION



Do not touch the connectors on the rear side of the instruments to protect against electrostatic discharge to the instruments.

# Installing the Software

The HP 81100 Graphical User Interface and the *VXIplug&play* drivers must be installed on the control PC. Depending on the system configuration, this may either be an external PC or a PC embedded in the VXI mainframe.

**NOTE** Before installing the software make sure that the HP I/O Libraries for Instrument Control are already installed on the control PC.

- 1** If required, connect a CD-ROM drive to the PC.
- 2** Insert the CD labeled “HP 81100 Pulse/Data Generator Family” (HP Part No. E8311-10010) into the CD-ROM drive.
- 3** The installer starts automatically when the CD is inserted. If it does not, open the Explorer, select the CD-ROM drive, and run `\Setup.exe`.
- 4** Then follow the instructions on screen:
  - Choose the destination folder.
  - Select the program folder `VXI\PNP`.
  - Select the components you want to install.