

# Transient Capture on the AEMC PowerPad III Model 8336

Transients are short-term current and voltage phenomena that occur in the system under measurement. The process the AEMC PowerPad III Model 8336 uses for recording transients is as follows:







- The instrument sampling rate is a constant 256 samples per cycle.
- When a transient search is started on the instrument, each sample is compared to the corresponding sample from the preceding cycle.
- The transient threshold is the user-defined amount of volts or amps for any datapoint to differ from the corresponding datapoint exactly 1 cycle earlier. The preceding cycle defines the mid-point of the trigger envelope and is used as reference.
- As soon as a sample is outside the envelope, the triggering event occurs; the transient data is then captured by the instrument.
- The cycle preceding the event and the three following cycles are saved to memory.

The following explains how to configure, schedule, and view a transient recording session on the Model 8336. These instructions assume you are using the Model 8336 as a standalone instrument.

Note that you can also perform these tasks by connecting the instrument to a computer running AEMC's DataView software. For more information, see the PowerPad III Model 8336 User Guide.





## Transient Recording Configuration

1. With the instrument turned ON, press the  button to display the Waveform Capture screen.
2. Ensure  Transient is highlighted, then press .
  - If there are no transient detection sessions stored in the instrument, the Detection Schedule screen appears.
  - If there are recordings in the instrument, the Detection List screen is displayed. In this case, press  to display the Detection Schedule screen.
3. Press the  function button under the  icon to display the Voltage Thresholds screen. At the top of the screen is the Threshold Set-up field. Options are:
  - **4V**: The same voltage difference threshold applies to all phases and the neutral in the electrical hook-up
  - **3V+VN**: One threshold applies to the phases and one applies to neutral
  - **V1+V2+V3+V4**: Each phase and neutral has its own assigned threshold

Depending on the electrical hook-up currently under measurement, not all these options may be available.





4. The setting in this field determines which of the four fields below it (1, 2, 3, and N) are editable:
  - **4V**: a single field is active for 1, 2, 3, and N.
  - **3V+VN**: one field is active for 1, 2, and 3; and another is active for N.
  - **V1+V2+V3+N**: each field is active.

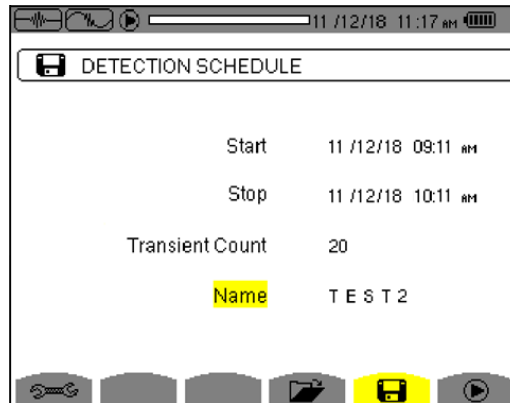
To edit a voltage threshold field, highlight it using the up and down arrow buttons, then confirm the selection by pressing . Use the left and right arrows to select a digit, and the up and down arrows to change it. You can also use these buttons to select units (V or kV). Press  to confirm the edited field.



5. Press the A button to display the Current Thresholds screen. This is similar to the Voltage Threshold screen. You can select which thresholds apply to which phases, and specify the value of the threshold (1mA through 9999kA). As with the voltage thresholds, not all these options may apply to all electrical hook-up types.

Note that current transients typically occur frequently. We recommend performing a current transient search only when looking for a specific type of transient. At other times, such as when you are primarily interested in voltage transients, you can effectively disable current transient searching by setting the threshold to its maximum value.




## Scheduling Transient Detection


1. Press the  button to display the Waveform Capture screen.
2. Ensure  Transient is highlighted, then press .
  - If there are no transient detection sessions stored in the instrument, the Detection Schedule screen appears.
  - If there are recordings in the instrument, the Detection List screen is displayed. In this case, press the  button to display the Detection Schedule screen.



3. This screen displays four input fields:
  - **Start** defines the time and date when the recording starts. This must be later than the current date and time.
  - **Stop** specifies when the recording ends. This must be later than the start date and time.
  - **Transient Count** defines the maximum number of transients that you want to capture before stopping the session.
  - **Name** allows you to name the test. This can be 8 characters long.
4. Use the arrow and  buttons to highlight, select, and edit these fields.
5. Press the  button to write the settings to the instrument and start the session.
6. If not enough memory is available, an error message appears informing you of this. Otherwise, the transient detection session will begin at the scheduled start time and date.

If a session is scheduled but not yet started, the message DETECTION ON STANDBY appears on the screen until the start time is reached, at which point the message changes to DETECTION IN PROGRESS.



When the session is active, the  icon blinks at the top of the screen, along with a status bar showing the progress of the session. In addition, the  (stop) button appears in place of .


During the session, the Transient Count number is reduced by 1 every time a transient is recorded. If this number counts down rapidly and appears as though it will reach zero well before stop time is reached, we recommend stopping the session and setting the threshold to a higher, less sensitive value. The session will continue until: (1) you press , (2) the Transient Count limit is reached (see Step 3), or (3) the stop time/date is reached.

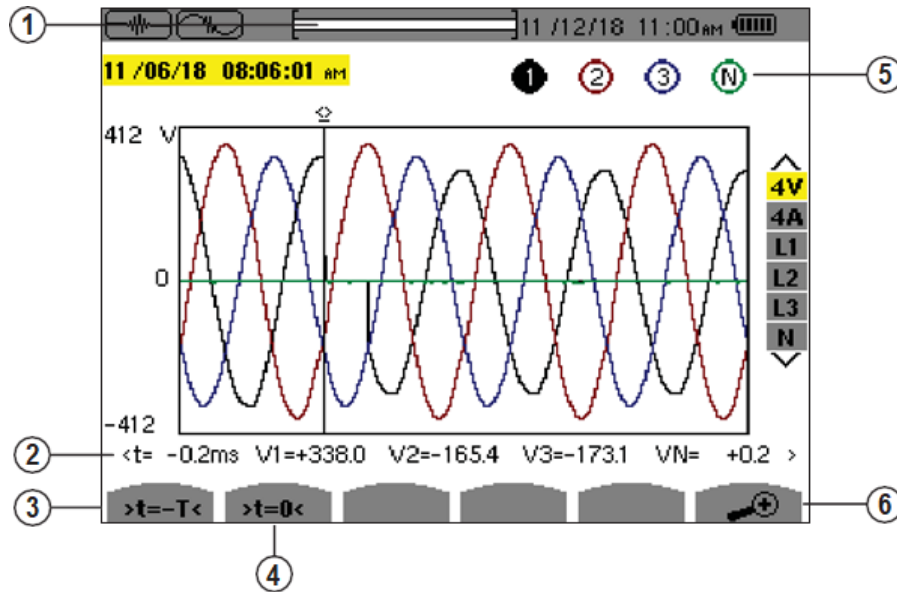
7. When the transient detection session is finished, it appears in the Detection List screen. You can now open the session and view its contents, as explained in the following.

## Viewing a Transient Detection Session



1. At the Detection Schedule screen, press the  button.

For all other displayed screens, press the  button, and then select  Transient. Either action displays the Detection List screen.

2. If more than one transient detection recording is stored, use the arrows to select the desired recording, then press  to open it.



In the preceding illustration:

- |  |   |
|--|---|
| 1 Location in the record of the zone displayed.  | 4 Move cursor to transient triggering time.   |
| 2 Instantaneous value of the signals according to the position of the cursor on the scale. Use  and  to move cursor. | 5 Number assigned to displayed graph (e.g. 1 is highlighted indicating channel V1 triggered capture of the transient) |
| 3 Move cursor to one period of the signal before transient triggering time.  | 6 Zoom In/Out   |