



Waveform Generator 175 (Model ER175)



- Interactive operation
- Output pulses, ramps, triangles, and sine waves
- Define initial conditions
- Ideal for cyclic voltammetry
- Works with many types of potentiostat
- Serial interface protocol with USB connection

Description

The eDAQ Waveform Generator 175 is designed to produce relatively slow waveforms where the user can manually interact with the experiment to pause or reverse the applied waveform.

Pulses, ramps, triangles and sinusoidal waveform can be defined with amplitudes up to ± 10 V. In addition the triangle function can be started at any arbitrary value.

Waveforms are generated by an internal DAC at clock speed of 10 kHz with 22 bit resolution.

TTL (or contact closure) signals are provided to synchronize the waveform with other laboratory devices (eg dropping mercury electrodes, third party potentiostats, light sources, stirrers, etc).

Applications

The Waveform Generator is ideal for cyclic and linear sweep voltammetry where the user may wish to reverse, or pause, the sweep during the experiment. It can also be used to set up a series of voltage levels, each over a different duration, and to repeat this sequence if required. Other applications include vibration and servo-control loop testing.

Computer Requirements

Windows XP, VISTA or 7. The computer should have a spare USB port for direct connection of the Waveform Generator, or for connection to an e-corder with which the Waveform Generator is being used.

Software

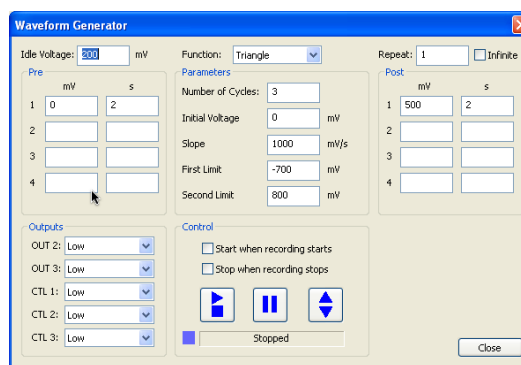
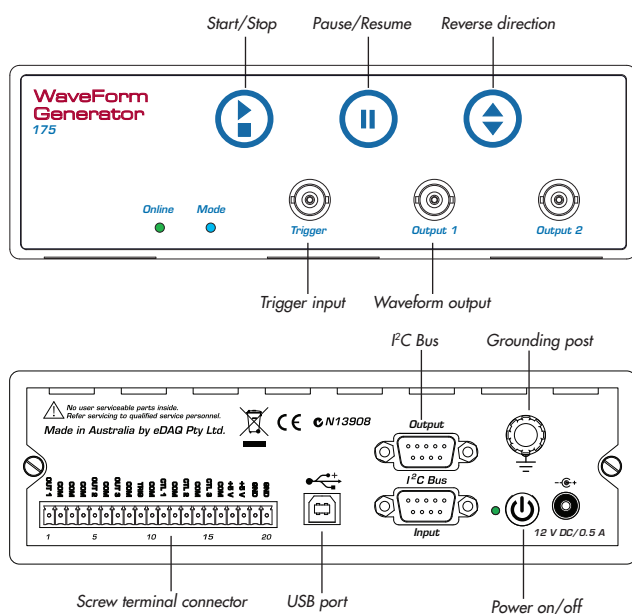
The Waveform Generator can be used with an e-corder unit (via the I²C connection) and eDAQ Chart software (v3.5.9 or later). Alternatively it can be used with its AC mains adaptor, and serial compatible software (RS232), via the computer USB port (a virtual serial port is created) – such as:

- LabVIEW™, www.ni.com
- Connect™, www.labtronics.com/DI/RS232_Software.htm
- WinWedge®, www.taltech.com/products/winwedge.html
- Tera Term, <http://logmett.com/>

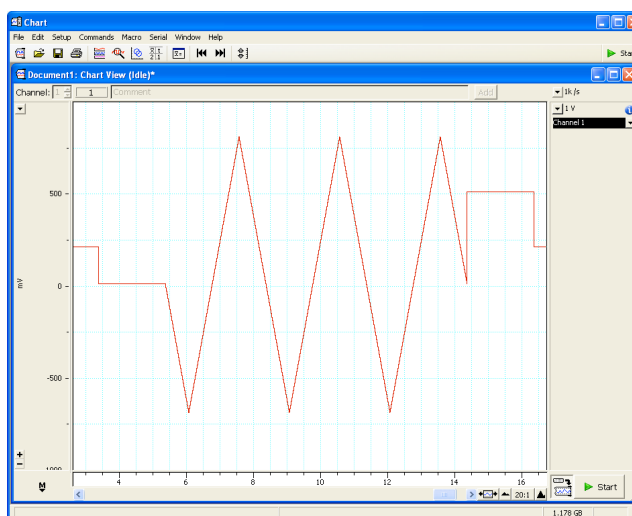
or with your own software written in Visual Basic or C++ etc.

Ordering

The eDAQ Waveform Generator (model ER175) includes hardware unit, cables and 12 V DC mains adaptor.



Typical parameter entry with Chart software.



Triangular waveform with pre- and post-voltage levels.

Specifications

Waveform signal	
Output signal:	±10 V maximum
Output accuracy:	±1 mV + 0.02% of full scale
Output current:	±50 mA continuous (200 ohm load)
Waveforms:	Pulse, ramp, triangular, sine
Ramp and triangle sweep rates:	< 1 mV/h to 1 V/s (with 0.1 mV steps) 10 V/s (with 1 mV steps)
Waveform steps:	minimum step width 100 µs minimum step height 5 µV
Noise (p-p):	<15 µV typical
Linearity:	<0.02% typical
Slew rate:	0.2 V/µs
Controls	
User interaction:	Stop/start Pause/resume Reverse sweep direction
Trigger input:	TTL or contact closure
Logic outputs :	CTL 1, CTL 2, CTL 3
Logic TTL levels:	4 V high @ 1 mA maximum each 0.5 V low at 15 mA maximum each
Analog outputs:	OUT 1 (main output), OUT2, OUT3
OUT2, OUT3 logic levels:	2.5 V high 0.0 V low

Available logic signals:	Low, High, Pulse at Run, Pulse at Function, Entire Run, Function Synch, Slope is Positive, Slope is Negative, Pulse per Cycle.
Auxiliary power:	Two +5 V outputs @ 100 mA maximum each.
Preconditioning levels:	4 (Chart software) 20 (serial protocol commands)
Postfunction levels:	4 (Chart software) 20 (serial protocol commands)
Function cycles:	1 to continuous
Repeat loops:	1 to continuous
Instrument Connection Port	
Type:	20 pin male connector, 3.5 mm spacing. Screw terminal adaptor supplied.
Data Communication	
USB:	USB 2.0 or 1.1 compliant
I ² C expansion port:	Power and control bus when used with e-corder. DB-9 connector.
Physical Configuration	
Dimensions (w x h x d):	200 x 65 x 250 mm (7.9 x 2.6 x 9.8")
Weight:	1.4 kg (3 lb 1 oz)
Power Requirements:	12 V DC, 2 A
Operating conditions:	0 to 35 °C 0 to 90% humidity (non-condensing)

eDAQ Pty Ltd reserves the right to alter these specifications at any time.

WARRANTY: eDAQ hardware units are supported by a three year warranty.

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