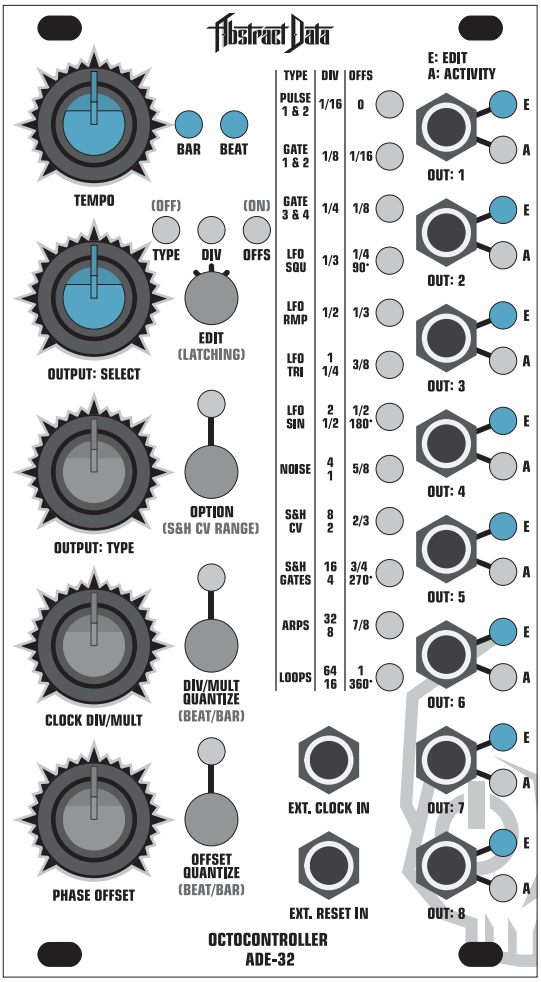
Abstract Data
INSTRUMENTS & EFFECTS
LONDON, ENGLAND

ADE-32 OCTOCONTROLLER

Control, Modulation, Triggering and Pattern module with
12 Output Types individually assignable to 8 simultaneous Outputs.

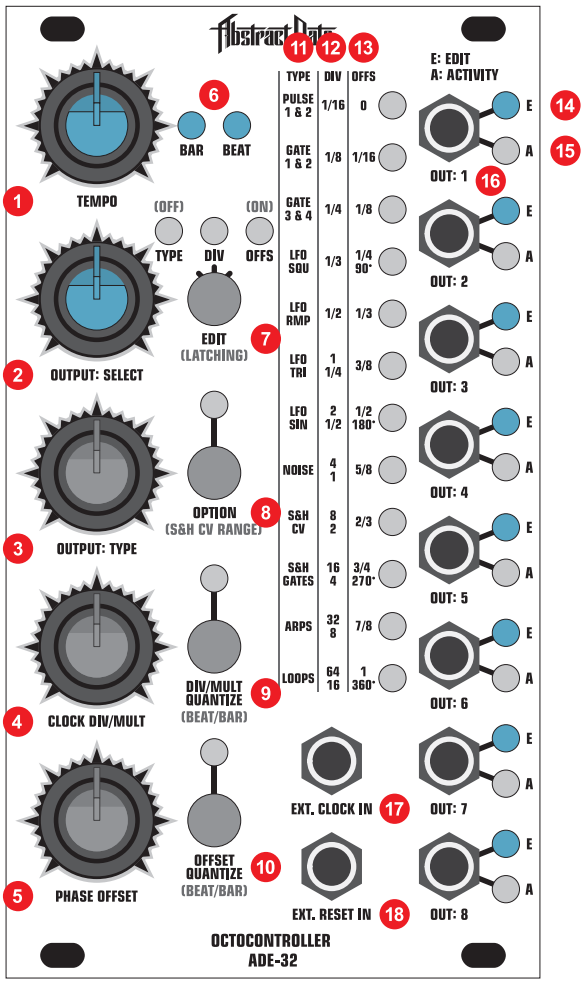


USER GUIDE

 http://www.abstractdata.biz info@abstractdata.biz Version 1.0 August 2015

Contents

1: Panel



1	**TEMPO:**	Sets the global/master Tempo of the on-board clock
2	**OUTPUT SELECT:**	Selects Outputs 1-8 for editing
3	**OUTPUT TYPE:**	Assigns an Output Type to the selected Output
4	**CLOCK DIV/MULT:**	Sets the Clock Division/Multiple for the selected Output
5	**PHASE OFFSET:**	Sets the Offset for the selected Output
6	**BAR/BEAT:**	Blue LEDs indicate Bar and Beat timing
7	**EDIT:**	Shows the Output Type, Clock Division/Multiple and Offset settings
8	**OPTION:**	Sets the Option for each Output Type
9	**DIV/MULT QUANTIZE:**	Sets the Clock Division/Multiple Quantizing for the selected Output
10	**OFFSET QUANTIZE:**	Sets the Offset Quantizing for the selected Output
11	**OUTPUT TYPE:**	White LED shows the Output Type for the selected Output
12	**OUTPUT DIVISION/MULTIPLE:**	White LED shows the Clock Division/Multiple for the selected Output
13	**OUTPUT OFFSET:**	White LED shows the Offset for the selected Output
14	**EDIT LED 1-8:**	Blue LED shows the selected Output
15	**ACTIVITY LED 1-8:**	White LED shows the Activity at each Output
16	**OUTPUTS 1-8:**	Your very own supply of Unicorns and Double Rainbows
17	**EXT. CLOCK INPUT:**	Syncs/Slaves the module to an External Clock
18	**EXT. RESET INPUT:**	Resets the module to the start of the global 16 bar loop

2: Overview

- The ADE-32 is an 8 output module capable of running multiple, synced, trigger, rhythm, modulation and control signals.

- There are 12 different output types including Gates, LFOs and S&H. Each output type also has an ‘option’ giving a total of over 40 potential output types.

- Any of the modulation types can be assigned to any of the 8 outputs in any order.

- Each output can be edited individually with settings for clock division/multiple and phase offset. These settings can be quantized or free-running.

- All output types can be synced to the on-board clock or to a clock supplied to the external input and will output a 64 beat / 16 bar cycle at tempos between 20 and 270 BPM.

- The module can be configured to suit the users preference through a choice of ‘latching’ or ‘non-latching’ knob behaviour and ‘immediate’ or ‘start of next bar’ behaviour for clock division/multiple and phase offset changes.

- The ADE-32 has built-in non-volatile memory and will retain all settings for all outputs on power down.

- The front panel is laid out in a simple 3-part grid that allows easy access to all the relevant performance information for all outputs – there is no menu-diving.

3: Quick Start

1) SET THE TEMPO

Set the tempo to the desired speed using the TEMPO knob.

The tempo is indicated by the two blue LEDs immediately to the right of the TEMPO knob.

2) SELECT AN OUTPUT TO EDIT

Select an output to edit using the OUTPUT: SELECT knob.

As you move the knob back and forth, the blue LEDs on the right hand side of the front panel will update to indicate the selected output.

Set the OUTPUT: SELECT knob so that the blue LED at OUT: 1 is illuminated.

3) ASSIGN AN OUTPUT TYPE TO THE SELECTED OUTPUT

Select an output type to assign to the selected output using the OUTPUT: TYPE knob.

As you move the knob back and forth, the vertical row of 12 white LEDs to the left of the outputs will update and illuminate to indicate the output type that has been selected.

Set the OUTPUT: TYPE knob so that LED 5 is illuminated.

Read across to the left column of text labelled TYPE – this indicates that LFO RMP has been assigned to the selected output.

4) SET THE CLOCK DIVISION

Set the clock division/multiple for the selected output type at the selected output using the CLOCK DIV/MULT knob.

As you move the knob back and forth, the vertical row of 12 white LEDs to the left of the outputs will update and illuminate to indicate the selected clock division/multiple.

Set the CLOCK DIV/MULT knob so that LED 8 is illuminated.

Read across to the middle column of text labelled DIV – this indicates that the output type now has a length of 4 Beats / 1 Bar at the current tempo.

5) SET THE PHASE OFFSET

Set the phase offset for the selected output type at the selected output using the PHASE OFFSET knob.

As you move the knob back and forth, the vertical row of 12 white LEDs to the left of the outputs will update and illuminate to indicate the phase offset that has been selected.

Set the PHASE OFFSET knob so that LED 7 is illuminated.

Read across to the right column of text labelled OFFS – this indicates that the output type now has a phase offset of 90 degrees.

6) REVIEW THE PATCH SETTINGS

Single-click the EDIT button to cycle through the TYPE (output type), DIV (clock division/multiple) and OFFS (phase offset) settings for the selected output.

The vertical row of 12 white LEDs to the left of the outputs will update to show the current settings for each of the 3 parameters for the selected output.

7) ASSIGN THE NEXT OUTPUT

Return to step 2 to select a new output to edit and then repeat steps 3-6 for each output.

4: Operation: Knobs

1) TEMPO

The TEMPO knob sets the master tempo for the entire module.

The clock divisions/multiples for all outputs are set from this tempo.

The tempo can be changed from 20 to 270 BPM. The 2 blue LEDs to the right of this knob indicate BAR and BEAT respectively with a slightly longer flash at the first beat of each 64 beat/16 bar cycle.

2) OUTPUT: SELECT

The OUTPUT: SELECT knob selects an output to edit.

Each of the 8 outputs has a blue LED marked ‘E’ (Edit) to the upper right that will illuminate to indicate the output that is being edited as you turn this knob.

3) OUTPUT: TYPE

The OUTPUT: TYPE knob assigns an output type to the selected output.

The 12 output types are listed on the front panel in the left-hand vertical column titled TYPE.

The vertical row of 12 white LEDs to the right of that column will update and illuminate to indicate the output type that has been selected.

4) CLOCK DIV/MULT

The CLOCK DIV/MULT knob sets the timing of the output type assigned to the selected output.

This timing is a division or a multiple of the master tempo.

The 12 timing divisions are listed on the front panel in the middle vertical column titled DIV.

The vertical row of 12 white LEDs to the right of that column will update and illuminate to indicate the clock division/multiple that has been selected.

5) PHASE OFFSET

The PHASE OFFSET knob sets a phase offset for the output you are editing. Phase offset is expressed in degrees or as a fraction of the total time of the clock division.

The 12 offset options are listed on the front panel in the right-hand vertical column titled OFFS.

The vertical row of 12 white LEDs to the right of that column will update and illuminate to indicate the phase offset that has been selected.

5: Operation: Buttons

- All buttons on the ADE-32 have 2 behaviours. The ‘local’ behavior, indicated by the black writing immediately below each button, is accessed by a ‘single click’ and is unique to the settings for each output. The ‘global’ behavior, indicated by the grey writing immediately below each button, is accessed by a ‘click & hold’ and sets that parameter globally for the entire module.

  The following text refers to ‘local’ behavior accessed by a single click.

1) EDIT

Clicking the EDIT button will scroll through to display the current status for each of the 3 parameters for the selected output: TYPE (output type), DIV (clock division/multiple) and OFFS (phase offset).

The white LED above the panel title will illuminate to show which of the 3 parameters has been selected and is ready to edit.

The vertical row of 12 white LEDs will also update and illuminate to show which option has been selected for each parameter.

These 3 LEDs will also update when the OUTPUT: TYPE, CLOCK DIV/MULT or PHASE OFFSET KNOBS are moved.

2) OPTION

Each output type has an option. Clicking the OPTION button will turn the option on or off (output types 1-8), activate looping (output types 9-10) or scroll through (output types 11-12).

For output types with only one option – the white LED above the OPTION button will illuminate to show whether the option is selected (LED on) or not (LED off).

For output types with a looping option – the white LED above the OPTION button will illuminate to show whether looping is on (LED on) or off (LED off).

For output types with multiple options the white LED above the OPTION button will illuminate momentarily with each press.

3) DIV/MULT QUANTIZE

The DIV/MULT QUANTIZE button will turn quantizing of clock division/multiple settings on or off for the selected output.

When quantizing is on, the white LED above the DIV/MULT QUANTIZE button will illuminate and the clock divisions/multiples for the selected output will lock to one of the 12 clock divisions listed in the vertical column on the front panel labeled DIV.

When quantizing is off, the white LED above the DIV/MULT QUANTIZE button will be off and the clock division at the selected output will move incrementally.

When quantizing is off, the vertical row of 12 white LEDs will flash at different speeds to show how far from (slow flash) or close to (fast flash) a particular clock division you are.

4) OFFSET QUANTIZE

The OFFSET QUANTIZE button turns quantizing of phase offset positions on or off for the selected output.

When quantizing is on, the white LED above the OFFSET QUANTIZE button will illuminate.

When turning the PHASE OFFSET – the phase offset for the selected output will lock to one of the 12 phase offset positions listed in the vertical column on the front panel labeled OFFS.

When quantizing is off, the white LED above the OFFSET QUANTIZE button will be off and the phase offset at the selected output will move incrementally.

When quantizing is off, the vertical row of 12 white LEDs will flash at different speeds to show how far from (slow flash) or close to (fast flash) a particular phase offset you are.

6: Operation: Outputs & Inputs

1) OUT: 1-8

The ADE-32 has 8 outputs aligned vertically down the right-hand side of the front panel.

Any of the 12 output types can be assigned to any of the 8 outputs.

To the right of each output are 2 indicator LEDs – a blue LED marked ‘E’ (Edit) to show which of the 8 outputs is currently selected for editing according to the position of the OUTPUT: SELECT knob and a white LED marked ‘A’ (Activity) to show what is happening at that output.

2) EXT. CLOCK IN

The ADE-32 can be operated using its on-board clock or can be synced/slaved to an external clock.

The ADE-32 will sync to the rising edge of an incoming signal between 20 and 270 BPM.

3) EXT. RESET IN

The ADE-32 can be reset using via the rising edge of an external input signal.

This will reset the cycle of all 8 outputs back to Beat 1 of the overall 64 beat cycle.

7: Operation: Global Settings

- All buttons on the ADE-32 have 2 behaviours. The ‘local’ behavior, indicated by the black writing immediately below each button, is accessed by a ‘single click’ and is unique to the settings for each output.

  The ‘global’ behavior, indicated by the grey writing immediately below each button, is accessed by a ‘click & hold’ and sets that parameter globally for the entire module.

  Notice that when a click & hold is performed the 3 LEDs above the EDIT button will perform a quick flash routine moving left to indicate a particular behavior has been turned off and right to indicate a particular behavior has been turned on.

  The following text refers to global behavior accessed by a click & hold.

1) EDIT [LATCHING]

A click & hold on the EDIT button will change the behavior for the OUTPUT: TYPE, DIV/MULT QUANTIZE and OFFSET QUANTIZE knobs between ‘non-latching’ and ‘latching’.

Non-latching means that when a knob is turned the setting for that output will instantly update to reflect the current knob position.

Latching means that no update will take place until the knob has been turned to the position that matches the setting for that knob.

2) OPTION [S&H CV RANGE]

A click & hold on the OPTION button will alternate the behaviour of the S&H CV output type between bipolar (+/- 5V) and unipolar (0-1V).

The unipolar values are quantized to whole notes across a 1 octave range.

3) DIV/MULT QUANTIZE [BEAT/BAR]

A click & hold on the DIV/MULT QUANTIZE button will change the behaviour of the CLOCK DIV/MULT knob between BEAT i.e. – the clock division/multiple will update as soon as the knob is turned and BAR – i.e. the clock division/multiple will update at the first beat of the next bar.

4) OFFSET QUANTIZE [BEAT/BAR]

A click & hold on the OFFSET QUANTIZE button will change the behaviour of the OFFSET QUANTIZE knob between BEAT i.e. – the phase offset will update as soon as the knob is turned and BAR – i.e. the phase offset will update at the first beat of the next bar.

8: Specs

HARDWARE:	**Controls (Knobs):**	Tempo Output: Select Output: Type Clock Division/Multiple Phase Offset
	Controls (Buttons):	Edit [Latching] Option [S&H Range] Division/Multiple Quantize [Beat/Bar] Offset Quantize [Beat/Bar]
	Inputs (Clock):	Ext. Clock In Ext. Reset In
	Outputs (Signal):	8x @ +/- 5V
	Power Requirements:	+/-12V via 16-pin, Doepfer-style IDC connector
	Current Draw:	125mA average
	Dimensions:	Width: 14HP Depth: Panel to IDC connector 35mm
	Supplied Accessories:	1x 16-pin, Doepfer-style cable 4x M3 screws 4x Nylon washers

PRECAUTIONS:

The ADE-32 uses the Doepfer standard for power connection and cable orientation.

The RED stripe on the supplied power cable connects to the NEGATIVE (-12V) rail on the ADE-32 with the RED stripe facing DOWN. This is marked on the back of the ADE-32 PCB as “– RED”.

The ADE-32 has diode and polyfuse protection built in but an incorrectly connected cable may still cause damage to the module or the power supply.

The rear panel of the ADE-32 has exposed parts and connections. Please ensure when handling the ADE-32 that the unit is held by the sides of the front panel or the sides of the PCB.

CREDITS:

Paul Soulsby
Ben Wilson
Edd Butterworth
Alex Theakston
Kirk Degiorgio
Martin Dubka
Tom Whitwell
Steven Grimley-Taylor

9: Output Types & Options

#	Name	Description	Option (Off)	Option (On)	Clock Division (Min)	Clock Division (Max)
1	Pulse 1 & 2	2 fixed-width pulses	5ms Duration	50ms Duration	1/16 Beat	64 Beats | 16 Bars
2	Gate 1 & 2	2 Gate types	1/16 of Clock Division	4/16 of Clock Division	1/16 Beat	64 Beats | 16 Bars
3	Gate 3 & 4	2 Gate types	12/16 of Clock Division	15/16 of Clock Division	1/16 Beat	64 Beats | 16 Bars
4	LFO SQU	Square wave LFO	Normal Phase	Inverted Phase	1/16 Beat	64 Beats | 16 Bars
5	LFO RMP	Ramp/Sawtooth LFO	Normal Phase	Inverted Phase	1/16 Beat	64 Beats | 16 Bars
6	LFO TRI	Triangle wave LFO	Normal Phase	Inverted Phase	1/16 Beat	64 Beats | 16 Bars
7	LFO SIN	Sine wave LFO	Normal Phase	Inverted Phase	1/16 Beat	64 Beats | 16 Bars
8	Noise	Digital noise	Digital Noise 1	Digital Noise 2	1/16 Beat	64 Beats | 16 Bars
9	S&H CV	Random CV	Looping: Off*	Looping: On	1/16 Beat	64 Beats | 16 Bars
10	S&H Gates	Random Gates	Looping: Off*	Looping: On	1/16 Beat	64 Beats | 16 Bars
11	Arps	10 Arpeggio types	Scroll: Arps 1-10	-	1/16 Beat	16 Beats | 4 Bars
12	Loops	10 Rhythmic Gates	Scroll: Loops 1-10	-	1/16 Beat	16 Beats | 4 Bars