



# ACE

## USER MANUAL

**DATEQ**  
*audio technologies*



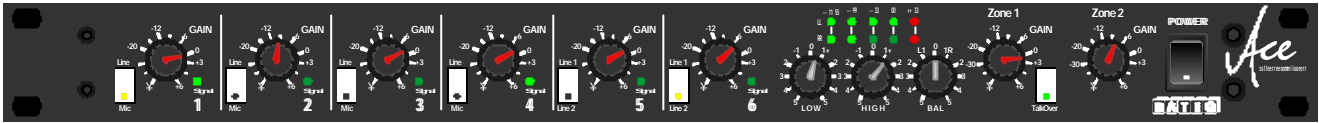
## Safety instructions

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- 1 All safety instructions, warnings and operating instructions must be read first.
- 2 All warnings on the equipment must be heeded.
- 3 The operating instructions must be followed.
- 4 Keep the operating instructions for future reference.
- 5 The equipment may never be used in the immediate vicinity of water; make sure that water and damp cannot get into the equipment.
- 6 The equipment may only be installed or fitted in accordance with the manufacturer's recommendations.
- 7 The equipment must be installed or fitted such that good ventilation is not obstructed in any way.
- 8 The equipment may never be installed in the immediate vicinity of sources of heat, such as parts of heating units, boilers, and other equipment which generates heat (including amplifiers).
- 9 Connect the equipment to a power supply of the correct voltage, using only the cables recommended by the manufacturer, as specified in the operating instructions and/or shown on the connection side of the equipment.
- 10 The equipment may only be connected to a legally approved earthed mains power supply.
- 11 The power cable or power cord must be positioned such that it cannot be walked on in normal use, and objects which might damage the cable or cord cannot be placed on it or against it. Special attention must be paid to the point at which the cable is attached to the equipment and where the cable is connected to the power supply.
- 12 Ensure that foreign objects and liquids cannot get into the equipment.
- 13 The equipment must be cleaned using the method recommended by the manufacturer.
- 14 If the equipment is not being used for a prolonged period, the power cable or power cord should be disconnected from the power supply.
- 15 In all cases where there is a risk, following an incident, that the equipment could be unsafe, such as:
  - if the power cable or power cord has been damaged
  - if foreign objects or liquids (including water) have entered the equipment
  - if the equipment has suffered a fall or the casing has been damaged
  - if a change in the performance of the equipment is noticedit must be checked by appropriately qualified technical staff.
- 16 The user may not carry out any work on the equipment other than that specified in the operating instructions.

## Dateq Ace

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The DATEQ Ace is a small, but versatile, six channel 19-inch mixer. It is highly suitable for use in dancing-schools, conference centres etc. The Ace is equipped with eight line-inputs, and four microphone inputs (channel 1...4) with, for each microphone, a gain-trimmer at the rear, an internal two-band equaliser and phantom-power that can be switched off.

Each microphone channel has a talk-over circuit to improve the speech intelligibility. This circuit, which is triggered by the microphone signal (i.e. it is voice-activated), ensures that this signal overrides all others. The TalkOver circuit of each microphone channel can be enabled or disabled with an internal jumper. The talk-over function can be disabled with the TalkOver switch on the front. The TalkOver threshold can be adjusted internally.

The Ace has three output-zones. Zone 1 has a dual equaliser, balance and volume-control. This zone is equipped with balanced and unbalanced outputs. Zone 2 only has a volume-control and unbalanced outputs. The volume of the third, optional, output zone can be controlled with an external potentiometer or a control voltage.

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## Product support

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For questions about the Ace, accessories and other products, please contact:

### **Dateq Audio Technologies B.V.**

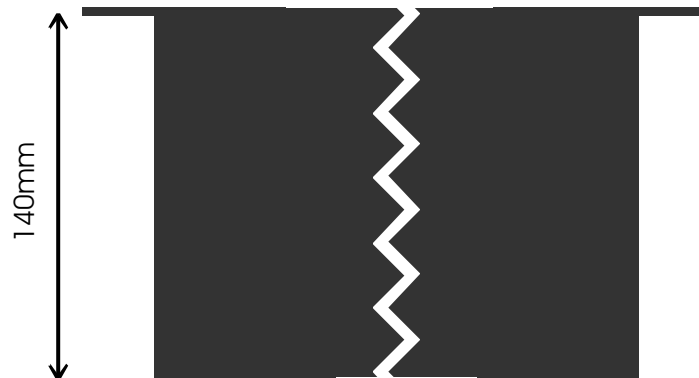
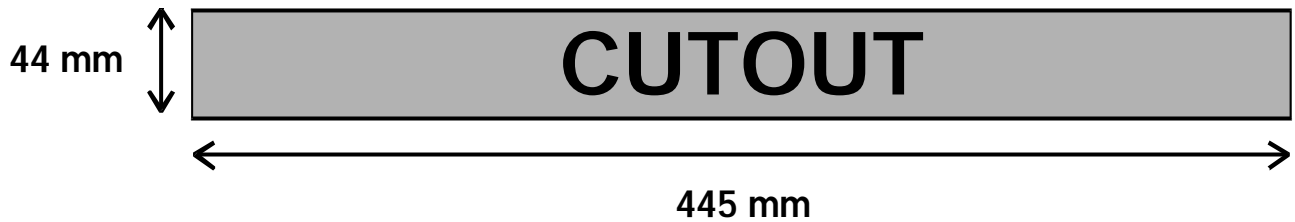
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## Installing the Ace

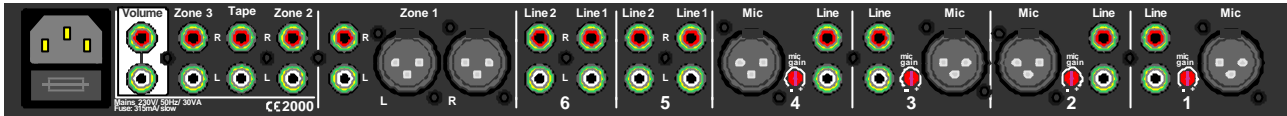
The Ace is designed to be fitted in a 19-inch rack and is just 1 unit high! The cabinet fits in an opening of 445 x 44 x 140mm (W x H x D). See also the dimensioned drawings below.

The 19-inch front is 3mm thick. When installing the mixer, remember to allow sufficient room for the connectors and plugs on the Crew's rear!



## Ace Connectorboard

At the rear all the audio in and outputs can be found, just as the euro-mains connector (with built in mains-fuse) and, when installed, the optional zone output with the volume control input.



### Zone 1/ Zone 2 outputs (Cinch female)

Pin	Function	Type
Tip	Audio +	Out
Shield	Ground	A-GND

### L/ R balanced Zone 1 Outputs (XLR 3-pins male)

Pin	Function	Type
1	Ground	A-GND
2	Audio +	Out
3	Audio -	Out

### Tape stereo output (Cinch female)

Pin	Function	Type
Tip	Audio +	Out
Shield	Ground	A-GND

### Zone 3 stereo output (Cinch female)

Pin	Function	Type
Tip	Audio +	Out
Shield	Ground	A-GND

### Zone 3 volume input (Cinch female)

Pin	Function	Type
Tip	Volume control (See page 7)	In
Shield	Ground	A-GND

### Line/ Line 1/ Line 2 Stereo inputs (Cinch female)

Pin	Function	Type
Tip	Audio +	In
Shield	Ground	A-GND

### Mic balanced inputs (XLR 3-pins female)

Pin	Function	Type
1	Ground	A-GND
2	Audio +	In
3	Audio -	In

## Connections

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<b>BALANCED ZONE 1 L/ R</b>	Electronically balanced master outputs on XLR connectors for the left and right channels of zone 1. This type of output guarantees perfect signal transmission even if long audio cables are being used.
<b>ZONE 1/ 2/ 3</b>	Unbalanced outputs on cinch connectors. These can be used to connect the Ace to an amplifier or recorder.
<b>ZONE 3 Volume</b>	This input controls the volume of the additional zone. Between the tip and the shield a potentiometer or an external control voltage can be supplied. See page 7 for a more detailed explanation.
<b>CHANNEL 6 and 5</b>	Cinch connectors for the stereo line inputs. Each channel has two identical inputs (line 1 and line 2) for CD-players, keyboards, MD-players etc. With the input-selector on the front on of the two inputs can be activated.
<b>CHANNEL 4...1</b>	Combined mono mic/ stereo line channel with an electronically balanced microphone input on a XLR-connector and a stereo line input on a cinch connector. When using an unbalanced microphone pin 1 and pin 3 must be connected to the shielding of the cable. Each microphone-input has a gain-trimmer at the connectorboard.
<b>MAINS/ FUSE</b>	Euro mains-input. The Ace operates at 230V/ 50Hz. Fuse: 5x20mm (small), 315mA slow.

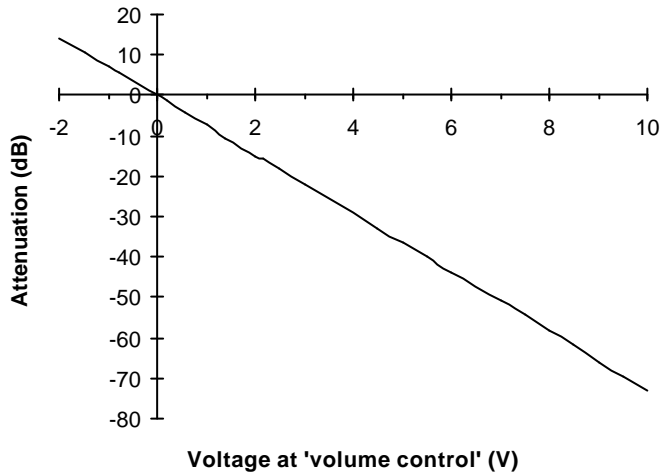
**For all audio cinch connectors:  
White = Left, Red = Right**

## Zone volume control

By means of this input the volume of the optional third zone can be attenuated or amplified. The volume control can be connected in two different ways:

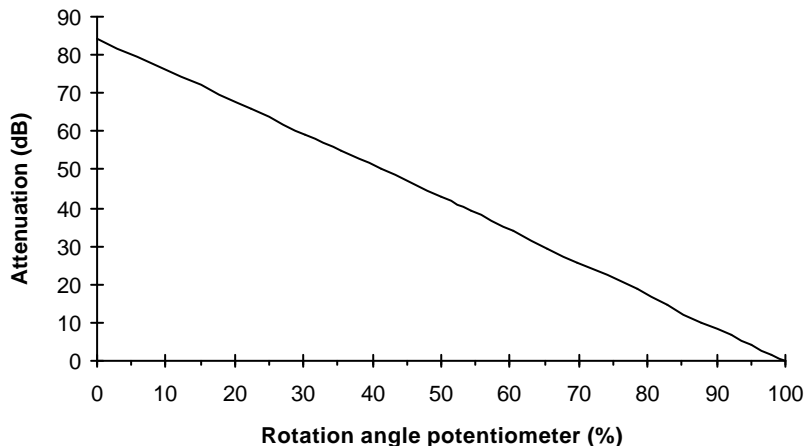
### Supplying an external voltage

When a positive voltage is supplied between the tip and the shielding of one of the cinch-connectors the volume will be attenuated (for both the left and the right channel). When a negative voltage is supplied the signal will be amplified. The amplification ranges from +14...-80dB. The graph below shows the attenuation as function of the applied voltage:



### Connecting a potentiometer

It is also possible to connect a potentiometer between the tip and the shielding to one of the cinch connectors. The signal can only be attenuated. The attenuation ranges from 0...-80dB. A 10kOhm logarithmically potentiometer gives the best results. The next graph shows the attenuation as function of the angle of rotation:

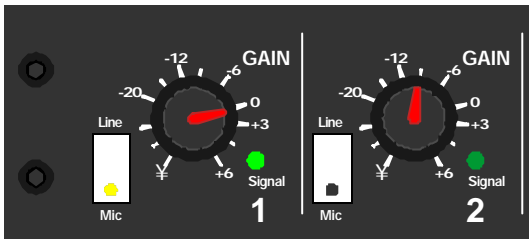


When an adjustable attenuation is not necessary a cinch connector with a short-circuit between the tip and shield must be connected. When the input is left open the volume will be fully attenuated.



## Combined microphone/ line channel (1...4)

These channels can be used to connect a microphone or a line source. The channel is equipped with gain-control and input-selector. Each microphone channel has a separate phantom-power supply, a TalkOver circuit and an internal dual equaliser. The microphone inputs have a gain-trimmer at the connectorboard. Each line-channel has the possibility to adjust the input sensitivity by means of an internal resistor.



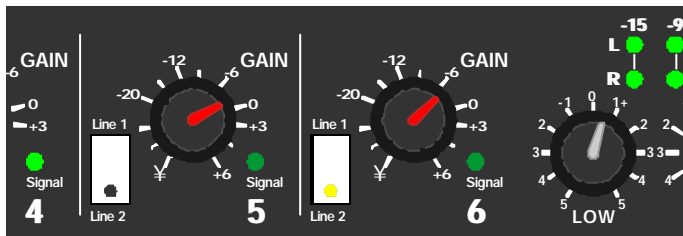
**GAIN** Volume preset for both the microphone and the stereo-line input.

**MIC/ LINE** Input selector.

**SIGNAL** This LED will light up when a signal is applied to the channel. The threshold is -30dB for the line input.

## Stereo Line inputs (5 and 6)

These channels can be used to connect stereo-line sources. Each channel has an input-selector and volume-control. Each line-channel has the possibility to adjust the input sensitivity by means of an internal resistor.



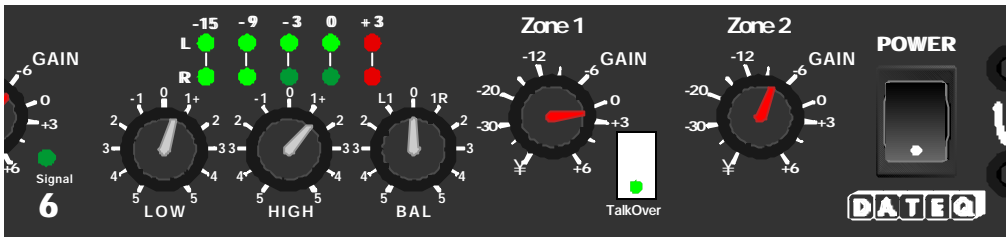
**GAIN** Volume preset for both line inputs.

**LINE 1/ LINE 2** Input selector.

**SIGNAL** This LED will light up when a signal is applied to the channel. The threshold is -30dB.

## Output zones

The Ace has two identical output zones. Zone 1 has a dual equaliser, balance and volume control. Zone 2 only has a volume-control. The volume of the third zone can externally be adjusted.

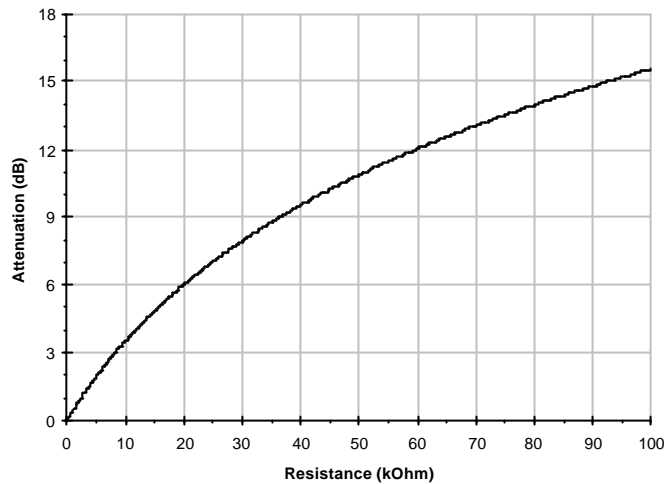
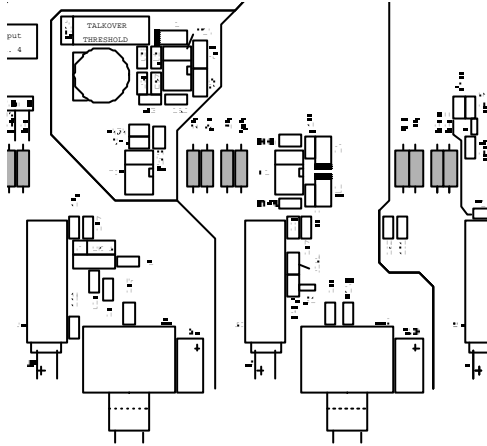


- LOW** Low tone control.
- HIGH** High tone control.
- BAL** Determines the balance between the left and the right channel. When in mid-position, the left and right channel can be heard evenly loud.
- GAIN** Volumecontrol for the unbalanced stereo output (zone 1 and zone 2) and the balanced stereo output (zone 1 only).
- TalkOver** Enables or disabled the TalkOver function. The LED lights up green when the TalkOver function is enabled, but not active. When you speak in one of the microphones and the TalkOver circuit of that microphone is enabled all the other channels will be attenuated. The LED will light up RED to indicate TalkOver activity.
- VU-METER** The Ace has a 2 x 5 segments LED-VU-meter. The signal of zone 1 is visible on the meter. An operating level of approximately 0dB is nominal.
- POWER** Mains switch.

## Internal adjustments

### GAIN SETTINGS LINE CHANNELS

The input-sensitivity can be adjusted for each line input. This can be done by replacing an internal resistor. When the cover is opened two conventional zero-ohm resistors can be found, just above the input selector of each channel. See the drawing below. When the resistor values are increased the the input-sensitivity will drop. See the graph below for the resistor-attenuation curve.



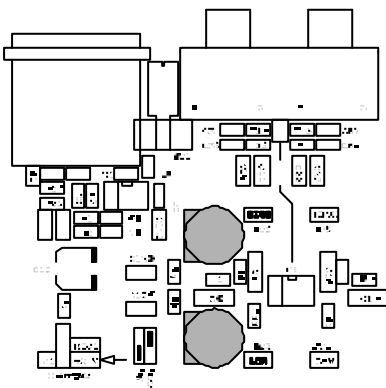
The resistor for the left and the right channel must have the same value!

### EQUALISERS

All microphone channels have an internal two-band equaliser. This equaliser is activated when the microphone-input is selected.

To adjust the equaliser settings the cover has to be removed. On the PCB two black trimmers can be found for each microphone channel. See the drawing below.

With a small screwdriver the level can be adjusted. As default both trimmers are in centre position (this means no equalisation). The maximum adjustment is +/- 18dB.

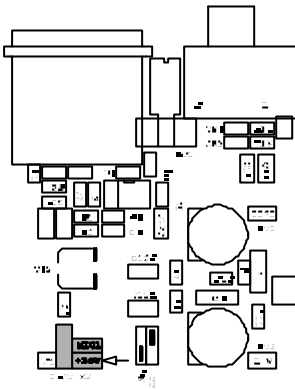


### PHANTOM-POWER

For each microphone-channel the phantom-power can be switched on,- or off.

To do this the cover has to be removed. On the PCB a jumper can be found with the text *phantome +24V*. By placing the jumper on the lower two pins the phantompower is activated. When the jumper is places on the upper two pins the phantompower is disabled.

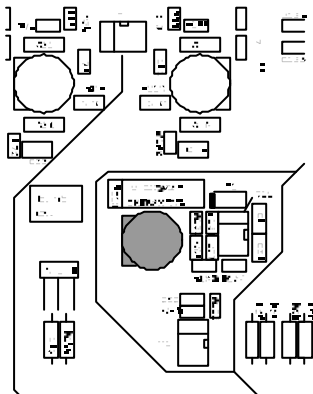
As a default the phantom power is disabled for all microphones.



### TALKOVER THRESHOLD

The TalkOver threshold can be adjusted with an internal trimmer. To do this the cover has to be removed. The trimmer is situated at the fourth microphone channel. Below the equaliser timmers an addition trimmer can be found. See the drawing below.

With a small screwdriver the level can be adjusted. By speaking in the microphone the level can be tested.



## Technical Specifications

### MONO INPUT

MIC (channel 1...4)	XLR-3 female, electronically balanced
Signal level	-50 dB @ 600 Ohm variable
Impedance	3 kOhm nominal
Input noise	< -105 dB (IHF-A)
Headroom	33 dB

### STEREO INPUTS

LINE (channel 1..4)	Cinch
Signal level	0 dB @ 600 Ohm variable
Input impedance	10 kOhm nominal
Input noise	< -74 dB (IHF-A)
Channel separation	> 56 dB @ 1 kHz
LINE 1/ 2 (channel 5 and 6)	Cinch
Signal level	0 dB @ 600 Ohm variable
Input impedance	10 kOhm nominal
Input noise	< -74 dB (IHF-A)
Channel separation	> 56 dB @ 1 kHz

### STONE CONTROL

#### EQUALISER CHANNEL 1...4

High	12 kHz $\pm$ 12 dB, Shelving
Low	60 Hz $\pm$ 18 dB, Shelving

#### EQUALISER ZONE 1

High	12 kHz $\pm$ 12 dB, Shelving
Low	40 Hz $\pm$ 12 dB, Shelving

### OUTPUTS

BALANCED MASTER (XLR)	+6 dB balanced/ 600 Ohm/ variable
ZONE 1/ ZONE 2 (Cinch)	0 dB unbalanced/ 600 Ohm/ variable
ZONE 3	0 dB unbalanced/ 600 Ohm/ variable

### FREQUENCY RESPONSE

MIC TO MASTER	50 Hz...20 kHz @ -1 dB
ALL OTHER INPUTS TO MASTER	10 Hz...20 kHz @ -1 dB
THD + N	0,02 % nominal (CCIR-RMS)

### GENERAL

#### BUILT-IN POWER SUPPLY

Mains voltage	220...240 VAC / 50 Hz
Power consumption	30 VA

#### SIZE AND WEIGHT

Front	483 x 44 mm (B x H) = 19", 1HE
Cutout	445 x 44 mm (B x H)
Cabinet depth	140mm without connectors
Weight	2.1kg Net.