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## Introduction

These 45 series modules are the same as the original designs, and contain all of the original components.

## 1073 Channel Amplifiers

These very popular sounding mic pre's are considered by many to capture the very essence of the Neve sound. In manufacture since the early 1970s, the Class A design offers 3 bands of EQ with one fixed high frequency and a high pass filter.

## 1084 Channel Amplifiers

Based on the same technology as the 1073s, the 1084s again deliver the unique sound and quality of Neve. However, the 1084s offer additional features, including 3 switchable EQ bands with cut and boost, a high $Q$ for presence and low pass/high pass filters.

## High Pass Filter (resistor modification)

## Important Note

The high pass filter in both the 1073 \& 1084 modules is a passive design and as such must be correctly terminated to achieve a maximally flat response.

In order to achieve this there is a 5 k 1 resistor fitted inside the module on the back connector between pin $\mathrm{E}(\mathrm{Ov})$ and pin K (fader send) see diagram below:


In situations where the fader connection is not used (most Neve 45 series consoles except BCM10's) then the resistor remains in place.

In situations where the fader connection is used (BCM1 O's and AMS Neve 1073/1084 racks) then the 5 kl resistor should be disconnected and replaced with a fader or potentiometer whose value is $4 \mathrm{k} 7 / 5 \mathrm{k}$ ohms.

Failure to do so will result in incorrect levels and uneven frequency response.

## Installation

The 1073s and 1084s are available as stand-alone modules, or in a choice of two housings.
The 3 U rack houses two modules mounted horizontally in a 19" rack-mounting unit.
The 5 U rack houses eight modules mounted vertically in a 19" rack-mounting unit.
Both have rear panels with XLRs for transformer balanced I/O.
The 3U rack rear panel has a fused, voltage selector IEC mains input connector. The 5U rack has a free standing AC supply with a fused, voltage selector IEC mains input connector and connects to the rack via a connector and a 1.5 meter cable.

Modules of any combination can be fitted into a rack unit.

Example: 5U Rack fitted with 1084 modules

## Additional Information

*Rack Mount Instructions *
A) Elevated Operating Ambient - If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (Tma) specified by the manufacturer.
B) Reduced Air Flow - Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.
C) Mechanical Loading - Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.
D) Circuit Overloading - Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.
E) Reliable Earthing - Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g. use of power strips).

Mains Voltage Adjustment
1.) Switch off unit.
2.) Remove fuse.
3.) Turn inner barrel with screwdriver or coin until correct voltage figure is under the white arrow on the housing.
4.) Replace fuse.

## Dimensions

| Stand-alone Modules | Width <br> mm (inches) | Height <br> mm (inches) | Depth <br> mm (inches) | Approx. <br> Weight <br> kg (lbs) |
| :---: | :---: | :---: | :---: | :---: |
| 1073 Module | $45(1.8)$ | $222(8.75)$ | $254(10)$ | $2.5(5.5)$ |
| 1084 Module | $45(1.8)$ | $222(8.75)$ | $254(10)$ | $2.5(5.5)$ |


| 19" Rack Mounting | U | Depth <br> mm (inches) | Height <br> mm (inches) | Approx. Weight <br> kg (lbs) |
| :---: | :---: | :---: | :---: | :---: |
| 2 Module Version | 3 | $405(16)$ | $133(5.25)$ | $11(24.2)^{*}$ |
| 8 Module Version | 5 | $405(16)$ | $222(8.75)$ | $30(66)^{*}$ |

* Fully populated rack


## Power Requirements

| Rack Units | 3 U | 5U |
| :---: | :---: | :---: |
| Rated Voltage | 100-230V AC | 100-230V AC |
| Rated Frequency | $50-60 \mathrm{~Hz}$ | $50-60 \mathrm{~Hz}$ |
| Rated Current | 0.5A Max | 0.8A Max |
| Primary Protection Fuse: |  |  |
| Operating Voltage | 100-230V AC | 100-230V AC |
| Fuse Rating and Type | T0.5A H 250V <br> $20 \mathrm{~mm} \times 5 \mathrm{~mm}$ CERAMIC | T1A H 250 V $20 \mathrm{~mm} \times 5 \mathrm{~mm}$ CERAMIC |
| Location | IEC Mains connector | IEC Mains connector |
| Secondary Protection Fuse: |  |  |
| Output Voltage |  | 24V DC |
| Fuse Rating and Type |  | $\begin{aligned} & \text { T2.0A L250V } \\ & 20 \mathrm{~mm} \times 5 \mathrm{~mm} \text { GLASS } \end{aligned}$ |
| Location |  | F1 |
| Output Voltage |  | 48 V DC |
| Fuse Rating and Type |  | T 250 mA L 250 V <br> $20 \mathrm{~mm} \times 5 \mathrm{~mm}$ GLASS |
| Location |  | F2 |


| Modules | Power |
| :---: | :---: |
| 1073 Module | $106 \mathrm{~mA} \pm 10 \mathrm{~mA}$ at 24 V DC. Negative Earth |
| 1084 Module | $106 \mathrm{~mA} \pm 10 \mathrm{~mA}$ at 24 V DC. Negative Earth |

## Mains Supply (rack units)

The 3 U rack has a fused, voltage selector IEC mains input connector.
The 5 U rack has a free standing AC supply with a fused, voltage selector IEC mains input connector and connects to the rack via a connector and a 1.5 meter cable.

The mains switch on the rear panel of the 3 U rack unit is non-illuminating.
The CH (chassis) and OV are linked internally.

## DC Power Supply Indicators (rack units)

The red LED on the front panel of both 3 U and 5 U rack units indicates +24 V power healthy when illuminated.

The green LED on the front panel of both 3 U and 5 U rack units indicates +48 V power healthy when illuminated.

## Phantom Power

Phantom power can be supplied to each module by pressing the phantom power switch on the front panel of the 3 U or 5 U rack. The LED in the switch will illuminate confirming that phantom power is supplied.

## Output Level Control

Each channel has an independent Output Level Control. The control is post-input, post-EQ and pre-output. This control can reduce the level at the output.

When the Output Control is fully clockwise the output gain is unity. The output is 20 dB down with the control in the mid-position.

Standalone 1073 \& 1084 Module Wiring to 18 way Free Plug


## Amplifier Controls

## 1073 Module



High Frequency: $\quad$ Smooth $+/-16 \mathrm{~dB}$ fixed frequency shelving at 12 kHz .
Low Frequency: $\quad$ Smooth $+/-16 \mathrm{~dB}$ shelving with selectable frequencies of 35 Hz , $60 \mathrm{~Hz}, 110 \mathrm{~Hz} \& 220 \mathrm{~Hz}$.

Mid Frequency: Smooth +/-18dB peaking, fixed 'Q' with, selectable centre frequencies of $0.36 \mathrm{kHz}, 0.7 \mathrm{kHz}, 1.6 \mathrm{kHz}, 3.2 \mathrm{kHz}, 4.8 \mathrm{kHz}$ \& 7.2 kHz .

High Pass Filter: $\quad 18 \mathrm{~dB}$ per octave slope, switchable between $50 \mathrm{~Hz}, 80 \mathrm{~Hz}$, $160 \mathrm{~Hz} \& 300 \mathrm{~Hz}$.

EQL Button: Switches the equaliser in or out of circuit.
Phase Button: Gives $180^{\circ}$ Phase change at Balanced Output.


## 1084 Module



High Frequency: $\quad$ Smooth $+/-16 \mathrm{~dB}$ shelving wit selectable frequencies of 10 kHz , 12 kHz and 16 kHz .

Low Frequency: $\quad$ Smooth $+/-16 \mathrm{~dB}$ shelving with selectable frequencies of 35 Hz , $60 \mathrm{~Hz}, 110 \mathrm{~Hz} \& 220 \mathrm{~Hz}$.

Mid Frequency:
Smooth $+/-12 \mathrm{~dB}$ or $+/-18 \mathrm{~dB}$ peaking with switchable 'High Q', selectable centre frequencies of $0.36 \mathrm{kHz}, 0.7 \mathrm{kHz}, 1.6 \mathrm{kHz}$, $3.2 \mathrm{kHz}, 4.8 \mathrm{kHz} \& 7.2 \mathrm{kHz}$.

High Pass Filter:
18 dB per octave slope, switchable between $45 \mathrm{~Hz}, 70 \mathrm{~Hz}, 160 \mathrm{~Hz}$ \& 360 Hz .

Low Pass Filter: $\quad 18 \mathrm{~dB}$ per octave slope, switchable between $6 \mathrm{kHz}, 8 \mathrm{kHz}, 10 \mathrm{kHz}$, 14 kHz , \& 18 kHz .

EQL Button: $\quad$ Switches the equaliser in or out of circuit.
Phase Button:
Gives $180^{\circ}$ Phase change at Balanced Output.


## Specifications

## 1073 and 1084 Modules

Microphone Input: Input Impedance $300 \Omega$ or $1200 \Omega$, gain +80 db to +20 dB in 5 dB steps.

Line Input:
Input Impedance 10,000 bridging, gain +20 dB to -10 dB in 5 dB steps.
Both inputs are transformer balanced and earth free.

Output: Maximum output is $>+26 \mathrm{dBu}$ into $600 \Omega$. Output impedance is $75 \Omega$ @ 1 kHz .
Output is transfomer balanced and earth free.

Distortion: $\quad$ Not more than $0.07 \%$ from 50 Hz to 10 kHz at +20 dBu output ( 80 kHz bandwidth) into $600 \Omega$.

Frequency Response: $\quad+/-0.5 \mathrm{~dB} 20 \mathrm{~Hz}$ to $20 \mathrm{kHz},-3 \mathrm{~dB}$ at 40 kHz Eq Out.

Noise:
Not more than -83dBu at all Line gain settings Eq In/Out ( 22 Hz to 22 kHz bandwidth).
EIN better than-125dBu @ 60dB gain.

## Recall Sheets

## 1073 - Vertical Module



1073 - Horizontal Module


## 1084 - Vertical Module



1084 - Horizontal Module


## Service Information

## Schematic Drawing Index - 1073/1084 Racks

| 3U Horizontal Rack (AM5028) | AM5028 Assembly Drawing <br> AM5028 Wiring Diagram |
| :--- | :--- |
| 5U Vertical Rack (AM5033) | AM5033 Assembly Drawing <br> AM5033 Wiring Diagram |

## Schematic Drawing Index - 1073 Module

| 1073 Channel Amplifier (PL31073-C) | E10006 Block Diagram <br> EH10023 Circuit Diagram |
| :--- | :--- |
| High Pass Filter (PL10182/C) | PL10182/C Assembly Drawing <br> D/10019C Circuit Diagram |
| HF/LF EQ Frequency (PL10205) | PL10205 Assembly Drawing <br> D/10042 Circuit Diagram |
| Presence Frequency (PL10211) | BA211 Assembly Drawing <br> D/10048 Circuit Diagram |
| Mic Line Output (PL10283AV) | PL10283 Assembly Drawing <br> EX10283 Circuit Diagram |
| Mic Amp/EQ Amp (PL10284) | PL10284 Assembly Drawing <br> EX10284 Circuit Diagram |
| Sensitivity Switch (PL20033) | EK20033 Wiring Diagram |
| Low Frequency Switch (PL20065) | EK20065 Wiring Diagram |
| HP Filter Switch (PL20066) | EK20066 Wiring Diagram |
| Presence Switch (PL20105) | EK20105 Wiring Diagram |

## Schematic Drawing Index - 1084 Module

| 1084 Channel Amplifier (PL31084-C) | EB20039 Block Diagram <br> EH10036 Circuit Diagram |
| :--- | :--- |
| High Pass Filter (PL10182/A) | PL10182/A Assembly Drawing <br> D/10019A Circuit Diagram |
| Low Pass Filter (PL10194/A) | PL10194/A Assembly Drawing <br> D10031/A Circuit Diagram |
| HF/LF EQ Frequency (PL10205) | See 1073 drawing section |
| Presence Frequency (PL1021 1/A) | PL10211/A Assembly Drawing |
| D/10048/A Circuit Diagram |  |




Title:1073/1084 Vertical Rack Wiring
Schedule Nr: AM5033
Issue: 5

| CABLE |  |  | FROM:- |  |  | ROUTING |  |  | TO:- |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Code | Type | Colour | Pin | Connector | Location | Signal | Length | Comment | Pin | Connector | Location |
| 310-166 | 32/0.2 | Green/Yellow | E | 420-618 Housing | R/P |  |  |  | Tag | 4mm Binding post | R/P |
| 310-219 | 32/0.2 | Black | A | 420-353 Contacts |  |  |  |  | 4 | J1 24VAC | SZN825B084 |
| 310-218 | 32/0.2 | Red | B |  |  |  |  |  | 3 | 24VAC |  |
| 310-084 | 32/0.2 | Orange | C |  |  |  |  |  | 2 | 48VAC |  |
| WR13011 | 32/0.2 | Yellow | D |  |  |  |  |  | 1 | 48VAC |  |
| 310-166 | 32/0.2 | Green/Yellow |  | 330-069 | Mid Rail |  |  |  |  | 330-069 | Backpanel |
| WR13010 | 32/0.2 | Blue | 2 | J2 0V24 | SZN825B084 |  |  |  | Tag | Solder | 0V Distribution |
| 310-218 | 32/0.2 | Red | 1 | $\mathrm{J} 2+24 \mathrm{~V}$ | SZN825B084 |  |  |  | Tag | Solder | $+24 \mathrm{~V}$ <br> Distribution |
| WR13010 | 32/0.2 | Blue | Tag | Solder | 0V Distribution |  |  |  | Chassis | 330-069 | Top mid rail |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
| 310-031 | 7/0.2 | Orange | 1 | 420-691 Housing | SYN824C128 |  |  |  | 2\&3 | Via 6K8 res's | Mic In Ch 1 |
| 310-031 | 7/0.2 | Orange | 9 | 420-612 Contacts | (Ch1\&2) |  |  |  | 2\&3 | Via 6K8 res's | Mic In Ch 2 |
| 310-031 | 7/0.2 | Orange | 1 | 420-691 Housing | SYN824C128 |  |  |  | 2\&3 | Via 6K8 res's | Mic In Ch 3 |
| 310-031 | 7/0.2 | Orange | 9 | 420-612 Contacts | (Ch3\&4) |  |  |  | 2\&3 | Via 6K8 res's | Mic In Ch 4 |
| 310-031 | 7/0.2 | Orange | 1 | 420-691 Housing | SYN824C128 |  |  |  | 2\&3 | Via 6K8 res's | Mic In Ch 5 |
| 310-031 | 7/0.2 | Orange | 9 | 420-612 Contacts | (Ch5\&6) |  |  |  | 2\&3 | Via 6K8 res's | Mic In Ch 6 |
| 310-031 | 7/0.2 | Orange | 1 | 420-691 Housing | SYN824B128 |  |  |  | 2\&3 | Via 6K8 res's | Mic In Ch 7 |
| 310-031 | 7/0.2 | Orange | 9 | 420-612 Contacts | (Ch7\&8) |  |  |  | $2 \& 3$ | Via 6K8 res's | Mic In Ch 8 |
| Insert contacts into all the unused positions on the 420-691 housings to improve retention force |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  | Fit heatsink | 1 | LM317T | Side plate |
|  |  |  |  |  |  |  |  | washer \& bush | 2 | SZN825B084 U3 |  |
|  |  |  |  |  |  |  |  | use H/S grease | 3 |  |  |



Title: 1073/1084 Horizontal Rack
Schedule Nr: AM5028
Issue: 1

| CABLE |  |  | FROM:- |  |  | ROUTING |  |  | TO:- |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Code | Type | Colour | Pin | Connector | Location | Signal | Length | Comment | Pin | Connector | Location |
| 310-183 | 24/0.2 | Green/Yellow | E | 330-071 | IEC |  |  |  | Stud | 330-454 | Safety Earth |
| 310-183 | 24/0.2 | Green/Yellow |  | 330-069 | Chassis |  |  |  | Stud | 330-454 | Safety Earth |
| 310-047 | 16/0.2 | Brown | L | 330-071 | IEC |  |  | Sleeve with | 1A | 330-071 | Switch |
| 310-052 | 16/0.2 | Blue | N | 330-071 | IEC |  |  | WA12005 | 2A | 330-071 | Switch |
|  |  | Yellow |  |  | TF14021 |  |  |  | 1 | CN20013 | Switch |
|  |  | Yellow |  |  | TF14021 |  |  |  | Centre | Solder | TF19201 |
| 310-052 | 16/0.2 | Blue | 1(1of2) | Solder | TF19201 |  |  |  | 2 | 330-071 | Switch |
|  |  | Black |  |  | TF14021 |  |  |  | 1(2of2) | Solder | TF19201 |
|  |  | Brown |  |  | TF14021 |  |  |  | 3 | Solder | TF19201 |
|  |  | Green |  |  | TF14021 |  |  |  | 2 | Solder | TF19201 |
|  |  | Blue |  |  | TF14021 |  |  |  | 4(1of3) | Solder | TF19201 |
| 310-046 | 16/0.2 | Black | 4(2of3) | Solder | TF19201 |  |  |  | 4(2of3) | Solder | TF19201 |
|  |  | Red |  |  | TF14021 |  |  |  | 4(3of3) | Solder | TF19201 |
|  |  | Orange |  |  | TF14021 |  |  |  | 6 | Solder | TF19201 |
|  |  | Violet |  |  | TF14021 |  |  |  | 5 | Solder | TF19201 |
|  |  | Grey |  |  | TF14021 |  |  |  | 7 | Solder | TF19201 |
|  |  | White |  |  | TF14021 |  |  |  | 3 | J1 (25VAC) | SZN825A084 |
|  |  | White |  |  | TF14021 |  |  |  | 4 | J1 (25VAC) |  |
| 310-052 | 16/0.2 | Blue | 2 |  | SZN825A084 |  |  |  | Bolt | 330-069 | Chassis |
| 310-031 | 7/0.2 | Orange | 1 | 420-691 Housing | CN2 |  |  |  | 2+3 | solder via 6K8 Res's | Mic In Ch1 XLR |
| 310-031 | 7/0.2 | Orange | 9 | 420-612 Contacts | $\begin{array}{\|l} \hline \text { SYN824B12 } \\ 8 \\ \hline \end{array}$ |  |  |  | $2+3$ | solder via 6K8 Res's | Mic In Ch2 XLR |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |






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|  |  |  | DRAWING <br> NUMBER | $\mathrm{D} / 10,019 \mathrm{c}$ \& D |
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| DRAWN <br> B.S. 308 |  | DRAWN | APP'D | DATE | ams neve plc. billington road, BURNLEY. LANCS. BB11 SUB. ENGLAND. TEL. (01282) 457011 FAX. (01282) 417282. | DRG No. | SHT |
|  | SCALE 1:1 | PF | 24 | 23.09.03 |  | PL10205 | 1 |






SW. POSNs.

1. OFF
2. 0.36 KHz
3. 0.7 KHz
1.6 KHz
4. 3.2 KHz
5. .3 .2 KHz
6. 4.8 KHz
7. 7.2 KHz
810.0 KHz




| $\left.\frac{1}{4} \right\rvert\,$ |
| :--- |
| ATLE |
| BA283 AM \&AV |

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| $C$ |
| :---: |
| $B$ |
| $\Delta$ | $\frac{7 / 6 / 72}{0-2 / 72}$







(1)






| FOR | 1084 | SEE | DRAWING |
| :--- | :--- | :--- | :--- |
| $\rightarrow$ | 1085 | $\rightarrow-$ | $\rightarrow-$ |
| $\rightarrow$ | 1082 | $\rightarrow$ | - |

1084 HAS SMOOTH CONTROLS REPLACES 1073
HAS SWITCHED HF
1085 HAS STEPPED CONTROLS REPLACES 1076
HAS SWITCHED HF
$\rightarrow 1082 \rightarrow$ - $\rightarrow$ ML 60555
1082 SIMILAR TO 1084

HAS 30 HZ INSTEAD OF 45 HZ ON ' HPF HAS ALL POT. DESIGNATIONS INVERTED




| LOUR | QUANTITY | STOCK CODE | DESCRIPTION | COMMENT |
| :--- | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
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C NMS EVE PLC.
scale



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> SW. POSNs.
> 1. $0 F F$
> 2. 0.36 KHz
> 3. 0.7 KHz
> 4. 1.6 KHz
> 5. 3.2 KHz
> 6. 4.8 KHz
> 7. 7.2 KHz
> 8 BHz

NOTE:
THIS BOARD IS IDENTICAL TO THE BA 211 , WITH ADDITION OF A WIRE LINK TO PIN P.




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ALL RESISTORS 4M7


