Solid State Logic

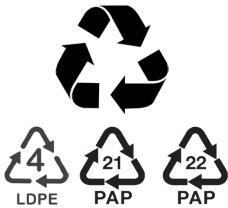### OXFORD · ENGLAND

B Series Dynamics Module
for 500 Series Racks
User Guide

SSL Part Number : 82BPBM03B

Safety and Installation Considerations

This page contains definitions, warnings, and practical information to ensure a safe working environment. Please take time to read this page before installing or using this apparatus.

General Safety

- Read these instructions.
- Keep these instructions.
- Heed all warnings.
- Follow all instructions.
- Do not use this apparatus near water.
- Do not expose this apparatus to rain or moisture.
- Clean only with dry cloth.
- Do not block any ventilation openings.
- Install in accordance with the rack manufacturer's instructions.
- There are no user-adjustments, or user-serviceable items, on this apparatus.
- Adjustments or alterations to this apparatus may affect the performance such that safety and/or international compliance standards may no longer be met.
- This apparatus is not to be used in safety critical applications.

Caution

- This apparatus should not be used outside of the scope of API 500 series compatible racks.
- Do not operate this apparatus with any covers removed.
- To reduce the risk of electric shock, do not perform any servicing other than that contained in these Installation Instructions unless you are qualified to do so. Refer

  all servicing to qualified service personnel.

Installation

- Ensure power is removed from the rack before fitting or removing this apparatus to or from the rack.
- Use the panel fixing screws supplied with the rack to secure this apparatus into the rack.

Instructions for Disposal of WEEE by Users in the European Union

The symbol shown here is on the product or on its packaging, which indicates that this product must not be disposed of with other waste. Instead, it is the user's responsibility to dispose of their waste equipment by handing it over to a designated collection point for recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, your household waste disposal service or where you purchased the product.

Standards Compliance

This apparatus complies with international EMC and Safety Standards when installed in a fully compliant rack.

UKCA

UK Electrical Equipment (Safety) Regulations 2016 (SI 2016/1101)

UK Electromagnetic Compatibility Regulations 2016 (SI 2016/1091).

The Restriction of the use of certain Hazardous Substances in Electrical and Electronic Equipment Directive (RoHS2) 2011/65/EU.

CE

EU Low Voltage directive (LVD) 2014/35/EU,

EU Electromagnetic Compatibility directive (EMC) 2014/30/EU.

The Restriction of the use of certain Hazardous Substances in Electrical and Electronic Equipment Directive (RoHS2) 2011/65/EU.

FCC

This device complies with Part 15 of FCC rules. Operation is subject to the following two conditions:

this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Industry Canada

This Class B digital apparatus complies with Canada ICES-003. Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

Electromagnetic Compatibility

BS EN 55032:2015, Class B. BS EN 55035:2017.

Electrical Safety

BS EN 62368-1:2014 + A11:2017, EN 62368-1:2014 + A11:2017, CSA CAN/CSA-C22.2 NO. 62368-1 2nd Ed, 2014.

Environmental

Temperature: Operating: +1 to 30°C. Storage: -20 to 50°C.

Limited Warranty

Please refer any warranty claim to the supplier of this equipment in the first instance. Full warranty information for equipment supplied directly by Solid State Logic can be found on our website:

www.solidstatelogic.com

Introduction

Congratulations on your purchase of this API 500 series compatible SSL B Series Dynamics module.

This module has been specifically designed to operate in an API 500 series rack such as the API lunchbox® or equivalent. In common with many such modules, the nominal input/output level is +4dBu.

The SSL B-DYN 500 Series module comprises a compressor/limiter and an expander/gate, the design of which returns faithfully to the circuit and key components which defined the sound of the earliest SSL B Series channel strip.

The Dynamics Section in the 4000 B-series console channel strip was unlike any other SSL channel dynamics modules (4000 E-series, 9000- series etc.). It had a design more similar to the topology of the SSL Bus Compressor. The compressor features three fixed ratios, 2:1, 4:1 & 10:1 with an additional 'ds' mode.

The circuitry and reponse of the B-DYN module uses the latest component technology and is modelled on the original circuit design of the SSL 4000 B-Series channel strip as Installed in the 80s in 'The Stone Room' at Virgin's Townhouse Studio (London), Le Studio (Montreal) and Record Plant (LA)

Operation

Please refer to the illustration opposite.

The IN button **1** , located bottom right, switches the entire module in and out of circuit.

The two vertical columns of LEDs **2** , located top left, provide an indication of dynamics activity. The row of green LEDs to the right show Gate/Expander activity whilst those to the left indicate operation of the Compressor/Limiter.

3 Compressor/Limiter

RATIO   Stepped compression ratios 2:1, 4:1, 10:1 and 'DS'. The 'DS' setting is a fixed 10:1 with an additional 12db/Oct high pass sidechain filter at approx. 7 kHz. When 'out, the compressor is bypassed

THRESH   Whenever a signal exceeds the level set by this control, the compressor will start to act at the ratio set by the RATIO control. The THRESHold and RATIO controls also provide automatic make-up gain. A small improvement to the linearity of this control has been made in the module over the original channel strip control. This helps with Threshold tuning using this smaller scale 500 series knobs.

HPF   6 dB/Oct High Pass Filter at 185 Hz in the Compressor sidechain to help reduce bass pumping effects

RELEASE   Switched/fixed release ranges from 0.2 s to 1.6 s with additional 'DS' & AUTO release options.

Attack Time is approx. 30ms (2ms in DS mode)

How to use the SL 4000 B de-esser (DS) mode

Set the COMPRESSOR RATIO and RELEASE controls to 'DS'. The de-ess ratio is a 10:1 ratio with 7 kHz filtered S/C input signal, delivering broadband compression triggered by sibilance. The 'DS' release is variable in accordance to the signal between 30 & 50 ms. This is a much faster minimum release than you would normally expect from an SSL Dynamics section. Also Attack time changes to 2 ms in DS mode.

COMPRESSOR RATIO & RELEASE in 'DS' work independently of each other & can be utilised in very creative ways. E.g you can use the fast 'DS' attack/release without using the 'DS' ratio, for aggressive compression.

4 Gate/Expander

This section can act as a 20:1 Gate or as a 2:1 Expander when the EXP button is pressed.

RANGE   Controls the maximum amount of gain reduction applied by the gate/expander. When set to 'out', the gate/expander is bypassed.

THRESH   Sets the threshold above which the the gate/expander will be opened.

RELEASE   Sets how long the signal remains audible after the gate/expander closes. Fixed settings of 0.1, 0.2, 0.4, 0.8 and 1.6 Seconds.

EXP   Switches the gate to expander mode with a gentle curve, for subtler control of level below the threshold.

                Attack Time is approx. 0.2 ms

5 LINK

This button switches the dynamics sidechain to be linked/summed if a link connection is implemented between a pair of modules. This is an optional feature of the back-plane of some 500 series compatible racks. 'LINKing' allows adjacent dynamics modules to act as a stereo pair. The effect of the LINK sidechan sum means that the dynamics module that is changing gain the most applies the same gain to its paired module. This prevents image shifts with stereo signals with dynamic stereo/panned content.

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O X F O R D • E N G L A N D

Visit SSL at:

www.solidstatelogic.com

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Revision History

Revision V2.0, March 2023 - Revised HPF Description