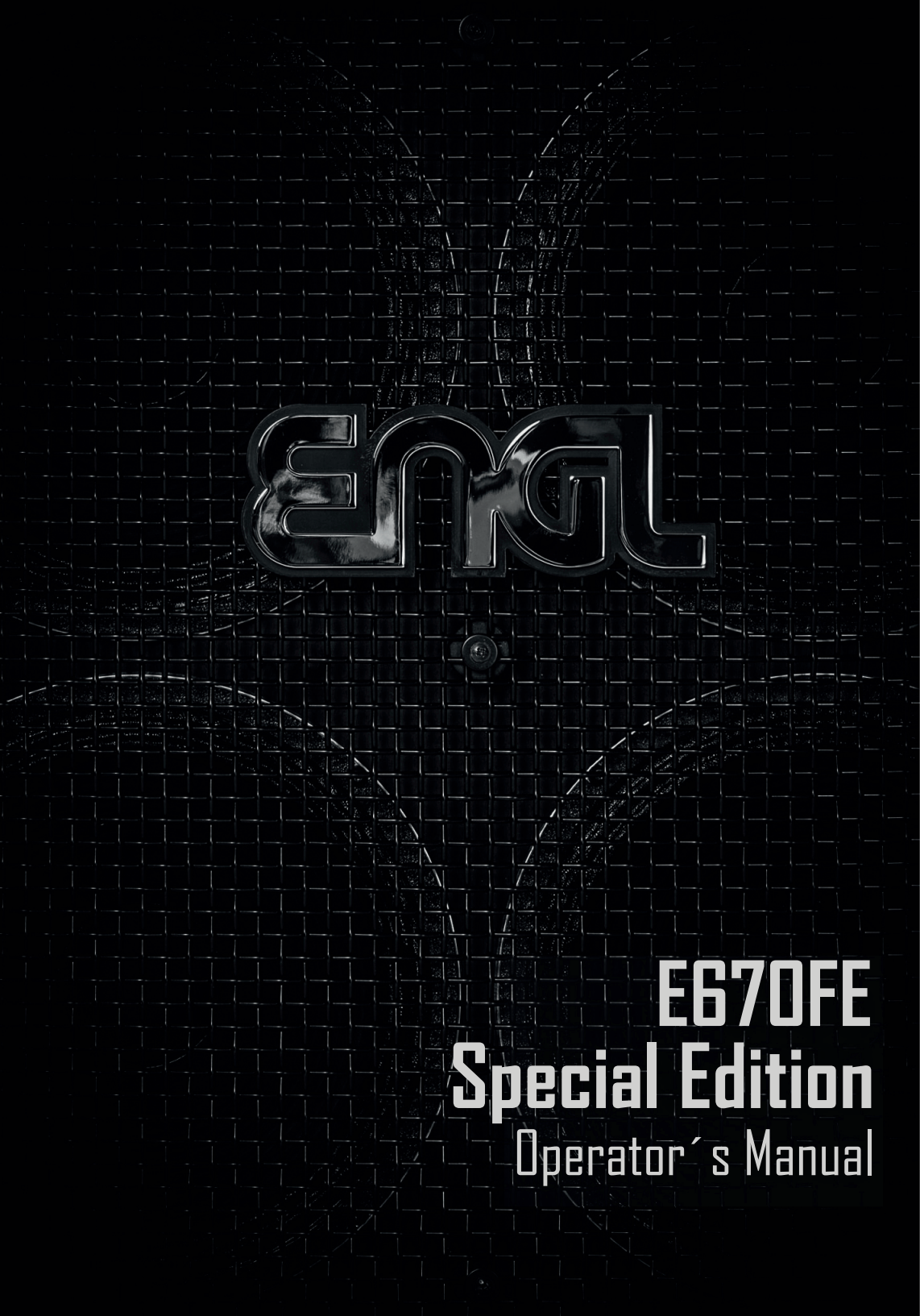
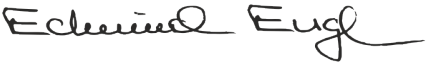
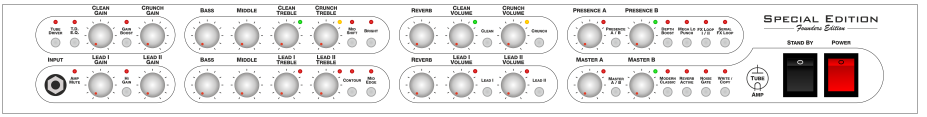

E670FE
Special Edition
Operator´s Manual

INTRODUCTION

The ENGL E670FE Special Edition "Founders Edition" represents the revival of the iconic ENGL Special Edition Head. The amplifier was crafted following Edmund ENGL´s vision of a contemporary sound, achieved by strategically rounding corners and edges. Almost 20 years after its initial release, there has been enough time for the E670 Special Edition to evolve and improve in terms of sound and functionality. Recognizing the need for a reintroduction, we proudly present the "Founders Edition" of this remarkable amplifier. It features subtle but necessary adjustments to suit the demanding sonic preferences of the mastermind. The approach taken was to retain the characteristic aspects of the original design while refining any rough edges. In consequence this ambitious project meant a sophisticated challenge for the Amp Sound Designer Horst Langer who started his career together with Edmund Engl in the early eighties. The resulting product is a highly advanced and versatile tube amp head that stands out in today's market.
As the owner of this exceptional piece of equipment, you are privileged to experience its unparalleled capabilities. We are proud to present the ENGL E670FE Special Edition and we hope your musical expectations will be far exceeded.



Edmund Engl, Founder of ENGL Amps



Tube Driver switch

Pressing this button activates the Tube Driver, a circuit similar to a very simple preamp channel. Think of it as an active, tube-driven preamp defeat circuit. Note that this circuit can be selected in reciprocation with the four channels, whereby reciprocation means that you can activate the Tube Driver irrespective of the currently active channel and vice versa. The LED above this button lights up to indicate Tube Driver is active.

» This feature can be controlled via MIDI (MIDI program change only).

» This feature can be controlled by the Z9 footswitch (optional available accessory) via the Serial Amp Control (S.A.C.) Port.

T.D. E.Q. (Tube Driver with Equalizer) switch

Pressing this button activates the Tube Driver with EQ. This function activates the onboard Tube Driver, a circuit similar to a very simple preamp channel. It could also be described as an active, tube-driven preamp defeat circuit, in this case with passive tone controls. Note that this circuit can be selected in reciprocation with the four channels, whereby reciprocation means that you can activate it irrespective of the currently active channel and vice versa. The LED above this button lights up to indicate T.D. E.Q. is active.

» This feature can be controlled via MIDI (MIDI program change only).

» This feature can be controlled by the Z9 footswitch (optional available accessory) via the Serial Amp Control (S.A.C.) Port.

Clean Gain

Gain control for the Clean channel.

Gain Boost switch

Pressing this button ups the gain factor, thereby increasing the amount of distortion in Clean and Crunch Channel. The LED above this button lights up to indicate Gain Boost is active.

» This feature can be controlled via MIDI (MIDI program change and/or control change CC#22).

» This feature can be controlled by the Z9 footswitch (optional available accessory) via the Serial Amp Control (S.A.C.) Port.

Crunch Gain

Gain control for the Crunch channel.

Bass

Bottom end voicing of the preamps passive EQ the Clean Channel and the Crunch Channel.

Middle
Mid-range voicing control of the preamps passive EQ for the Clean Channel and the Crunch Channel.

Clean Treble
Upper range voicing control of the preamps passive EQ for Clean Channel.

Crunch Treble
Upper range voicing control of the preamps passive EQ for Crunch Channel.

Mid Shift switch
This voicing function works on the channels Clean and Crunch and affects both channels by boosting and/or cutting certain mid-range frequencies of the signal when activated. Mid Shift affects a broad mid range spectrum between approximately 200 Hz and 2 KHz. The red LED above the push button lights up to indicate that Mid Shift is activated.
» This feature can be controlled via MIDI (MIDI program change and/or control change CC#23).
» This feature can be controlled by the Z9 footswitch (optional available accessory) via the Serial Amp Control (S.A.C.) Port.

Bright switch
This voicing function works on the channels Clean and Crunch and affects both channels by boosting the upper treble range (effectiveness decreases at higher Gain settings). The red LED above this button lights up to indicate that Bright is activated.
» This feature can be controlled via MIDI (MIDI program change and/or control change CC#29).
» This feature can be controlled by the Z9 footswitch (optional available accessory) via the Serial Amp Control (S.A.C.) Port.

Reverb
This controls adjusts the amount of reverb for the Clean Channel and the Crunch Channel.

Clean Volume
Volume control for the Clean channel (pre-FX Loop, influences the send level). Use this knob to dial in the desired balance of levels between the Clean channel and the other channels.

Clean switch
Channel selector to activate the Clean channel. The green LED top right of the Clean Volume and the Clean Treble knob lights up to indicate that the Clean channel is engaged.
» This feature can be controlled via MIDI (MIDI program change only).
» This feature can be controlled by the Z9 footswitch (optional available accessory) via the Serial Amp Control (S.A.C.) Port.
» This feature can be controlled via the ENGL Z4 Footswitch (optional available accessory; conventional 6.3mm / ¼" TRS – dual footswitch).

Crunch Volume
Volume control for the Crunch channel (pre-FX Loop, influences the send level). Use this knob to dial in the desired balance of levels between the Crunch channel and the other channels.

Crunch switch
Channel selector to activate the Crunch channel. The yellow LED top right of the Crunch Volume and the Crunch Treble knob lights up to indicate that the Crunch channel is engaged.
» This feature can be controlled via MIDI (MIDI program change only).
» This feature can be controlled by the Z9 footswitch (optional available accessory) via the Serial Amp Control (S.A.C.) Port.
» This feature can be controlled via the ENGL Z4 Footswitch (optional available accessory; conventional 6.3mm / ¼" TRS – dual footswitch).

Presence A
This control defines the Treble response in the poweramp stage. The red LED top right to the knob lights up to indicate Presence B is active.

Presence A/B switch
Switches back and forth between Presence A and Presence B. The LED top right to the respective Presence control lights up to indicate which one is activated. Presence A is indicated by a red LED, Presence B is indicated by a green LED.
» This feature can be controlled via MIDI (MIDI program change and/or control change CC#25).
» This feature can be controlled by the Z9 footswitch (optional available accessory) via the Serial Amp Control (S.A.C.) Port.

Presence B
This control defines the Treble response in the poweramp stage. The green LED top right to the knob lights up to indicate Presence B is active.

Depth Boost switch
Push this push button to beef up the bottom end in the poweramp stage only. The red LED above this button lights up to indicate the Depth Boost is activated.
» This feature can be controlled via MIDI (MIDI program change and/or control change CC#26).
» This feature can be controlled by the Z9 footswitch (optional available accessory) via the Serial Amp Control (S.A.C.) Port.

Mega Lo Punch switch
Push this push button to beef up the bottom end globally in the preamp circuit for the four channels excluding the Tube Driver Channel and to some extent in the poweramp too. The red LED above this button lights up to indicate the Depth Boost is activated.
» This feature can be controlled via MIDI (MIDI program change and/or control change CC#27).
» This feature can be controlled by the Z9 footswitch (optional available accessory) via the Serial Amp Control (S.A.C.) Port.

FX Loop I/II switch
Push this button to switch between FX Loop I and FX Loop II. The red LED above the push button lights up to indicate that FX Loop II is activated.
» This feature can be controlled via MIDI (MIDI program change and/or control change CC#30).
» This feature can be controlled by the Z9 footswitch (optional available accessory) via the Serial Amp Control (S.A.C.) Port.

Serial FX Loop switch
Push this button to switch on the serial FX Loop. The red LED above the push button lights up to indicate that the serial FX Loop is activated.
» This feature can be controlled via MIDI (MIDI program change and/or control change CC#31).
» This feature can be controlled by the Z9 footswitch (optional available accessory) via the Serial Amp Control (S.A.C.) Port.

Input jack
Unbalanced input (conventional 6.3mm / ¼" TS). Plug your guitar in here using a shielded instrument cable.

Amp Mute LED
This LED lights up when Amp Mute is active and/or when the Stand By switch is activated (amp is in Stand By mode).
» Amp Mute can be controlled via MIDI (MIDI program change and/or control change CC#7).
Note: If you want the power amp to be enabled in a MIDI preset, you must program it with Stand By set to On position!

Lead I Gain
Gain control for the Lead I channel.

Hi Gain switch
Pressing this button ups the gain factor, thereby increasing the amount of distortion in both Lead Channels. The red LED above this button lights up to indicate Hi Gain is active.
» This feature can be controlled via MIDI (MIDI program change and/or control change CC#22).
» This feature can be controlled by the Z9 footswitch (optional available accessory) via the Serial Amp Control (S.A.C.) Port.

Lead II Gain
Gain control for the Lead II channel.

Bass
Bottom end voicing of the preamps passive EQ the Lead I Channel and the Lead II Channel.

Middle
Mid-range voicing control of the preamps passive EQ for the Lead I Channel and the Lead II Channel.

Lead I Treble
Upper range voicing control of the preamps passive EQ for Lead I Channel.

Lead II Treble
Upper range voicing control of the preamps passive EQ for Lead II Channel.

Contour switch
This voicing function works on the channels Lead I and Lead II and affects both channels by boosting and/or cutting certain mid-range frequencies of the signal when activated. Contour affects more prominently the lower mid range below 400 Hz and in addition to a certain degree even higher mid frequencies. The red LED above the push button lights up to indicate that Contour is activated.
» This feature can be controlled via MIDI (MIDI program change and/or control change CC#23).
» This feature can be controlled by the Z9 footswitch (optional available accessory) via the Serial Amp Control (S.A.C.) Port.

Mid Edge switch

This voicing function works on the channels Lead I and Lead II and affects both channels by boosting/cutting certain mid-range frequencies of the signal when activated. Mid Edge affects more prominently the higher mid range above 600 Hz and in addition to a lesser extent even lower mid frequencies. The red LED above the push button lights up to indicate that Contour is activated.

» This feature can be controlled via MIDI (MIDI program change and/or control change CC#29).

» This feature can be controlled by the Z9 footswitch (optional available accessory) via the Serial Amp Control (S.A.C.) Port.

Reverb

This control adjusts the amount of reverb for the Lead I Channel and the Lead II Channel.

Lead I Volume

Volume control for the Lead I channel (pre-FX Loop, influences the send level). Use this knob to dial in the desired balance of levels between the Lead I channel and the other channels.

Lead I switch

Channel selector to activate the Lead I channel. The red LED top right of the Lead I Volume and the Lead I Treble knob lights up to indicate that the Lead I channel is engaged.

» This feature can be controlled via MIDI (MIDI program change only).

» This feature can be controlled by the Z9 footswitch (optional available accessory) via the Serial Amp Control (S.A.C.) Port.

» This feature can be controlled via the ENGL Z4 Footswitch (optional available accessory; conventional 6.3mm / ¼" TRS – dual footswitch).

Lead II Volume

Volume control for the Lead II channel (pre-FX Loop, influences the send level). Use this knob to dial in the desired balance of levels between the Lead II channel and the other channels.

Lead II switch

Channel selector to activate the Lead II channel. The red LED top right of the Lead II Volume and the Lead II Treble knob lights up to indicate that the Lead II channel is engaged.

» This feature can be controlled via MIDI (MIDI program change only).

» This feature can be controlled by the Z9 footswitch (optional available accessory) via the Serial Amp Control (S.A.C.) Port.

» This feature can be controlled via the ENGL Z4 Footswitch (optional available accessory; conventional 6.3mm / ¼" TRS – dual footswitch).

Master A
Master volume knob, located post FX Loop. It controls the poweramp output level. The red LED top right to the knob lights up to indicate Master A is active.

Master A/B switch
Push this button to switch between Master A and Master B. The LED top right to the respective Master control lights up to indicate which one is activated. Master A is indicated by a red LED, Master B is indicated by a green LED.
» This feature can be controlled via MIDI (MIDI program change and/or control change CC#14).
» This feature can be controlled by the Z9 footswitch (optional available accessory) via the Serial Amp Control (S.A.C.) Port.

Master B
Master volume knob, located post FX Loop. It controls the poweramp output level. The green LED top right to the knob lights up to indicate Master B is active.

Modern/Classic switch
This sound-shaping feature voices the basic tonal character of the four channels Clean, Crunch, Lead I and Lead II. You can choose between a more contemporary sound (Modern) or vintage-approved (Classic) tone. The red LED above the push button lights up to indicate that the Classic mode is activated.
» This feature can be controlled via MIDI (MIDI program change and/or control change CC#15).
» This feature can be controlled by the Z9 footswitch (optional available accessory) via the Serial Amp Control (S.A.C.) Port.

Reverb Active switch
Push this button to activate / deactivate the Reverb function. The red LED above this button lights up to indicate that the function is activated.
» This feature can be controlled via MIDI (MIDI program change and/or control change CC#28).
» This feature can be controlled by the Z9 footswitch (optional available accessory) via the Serial Amp Control (S.A.C.) Port.

Noise Gate switch

Push this button to activate / deactivate the Noise Gate function and suppress excess noise in the Crunch, Lead I and Lead II Channels. Control the Noise Gate threshold using the Noise Gate Threshold knob located on the back panel of the amp. The red LED above this push button lights up to indicate that the function is activated.

» This feature can be controlled via MIDI (MIDI program change and/or control change CC#24).

» This feature can be controlled by the Z9 footswitch (optional available accessory) via the Serial Amp Control (S.A.C.) Port.

Write/Copy

Press this button to store the modified setting of a programmable feature to a MIDI memory slot (generally called a preset). Here is how to distinguish between WRITE and COPY: with the former you' re actually programming or writing a new MIDI preset, with the latter you' re making an exact duplicate of an existing preset. The system will select a WRITE operation whenever you edit a MIDI preset, that is, when you have modified a programmable feature. You' ll know that this is the case because the Status LED flashes steadily when you edit one or several programmable features. If you press the button and did not edit a MIDI preset, the system will select. This means that the given preset becomes the source, and its contents are dumped to another preset and stored there. When you press this button, the Status LED lights up continuously to indicate is activated. The system quits mode autonomously if you do not select a new MIDI preset within about 30 seconds. The preset programming process – the WRITE command, that is – is not carried out as soon as you press the button. Pressing the button merely initiates the process. You must hold it down for about a second until the Status LED flashes three times in rapid succession. This mechanism is designed to prevent inadvertent programming. You can cancel the programming process at any time before the Status LED first illuminates by releasing the WRITE button. Again, the preset will only be programmed successfully if you press and hold the button until the Status LED flashes three times.

You' ll have to go through a similar routine to copy a preset once you select a target preset: When the Status LED extinguishes, the copy operation is underway and can no longer be canceled. The LED flashes three times to indicate the preset was copied successfully. You can cancel the copy operation by releasing the key, but only for as long as the LED lights up continuously.

MORE GOOD TO KNOW INFO: Note that the Status LED also indicates the status of components unrelated to WRITE and COPY. The micro controller runs a short system check after you switch the amp on. Should it find a defect in the memory chip (EEPROM), the LED will flash in a pattern of five short bursts. Press the WRITE/COPY button to confirm that you got the message. Once you have done this, the system will be ready to run, although you may encounter problems when attempting to select or store MIDI preset.

How to store a setting with programmable features to a MIDI memory slot (generally called a preset)
This is how it works:

1. Send a PC # message to the amp.
2. Select the desired channel and functions for the preset you want to create.
3. Press and hold the Write/Copy push button for about 2 seconds to save the preset to the formerly sent PC # until the Write/Copy LED is confirming the process by flashing 3 times short.

The Write/Copy LED is also signalizing by permanently slow flashing when a change to a preset is recognized.

Stand By switch

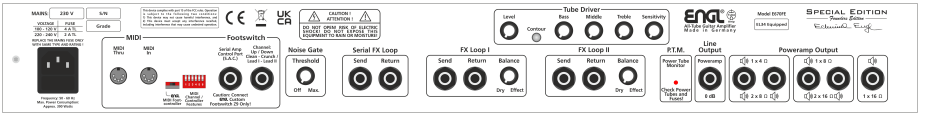
Use this switch to silence the amp when you take a longer break. The amp´s tubes stay nice and toasty, and the amp is ready to roll immediately when you ramp it back up to full power. The Stand By switch is also well-suited for muting the amp for brief breaks, e.g. when you are switching guitars.

Note: If you want the power amp to be enabled in a MIDI preset, you must program it with Stand By set to On position!

Power switch

Mains power on/off.

Please note: Ensure that the Stand By switch is set to Stand By before you switch the amp on. Let the tubes heat up for about 30 seconds before you activate the poweramp. This procedure spares the tubes.



Main Supply Connector (AC Power Inlet, IEC – C14 connector)

Plug the mains cord in here.

CAUTION! Make sure you use an intact mains line cord with a grounded plug! Before you power the amp up, ensure the voltage value (e.g. printed on the Type Label or alongside the mains port) is the same as the current of the local power supply or wall outlet. Please also heed the guidelines set forth in the separately included pamphlet, Instructions for the Prevention of Fire, Electrical Shock and Injury.

Mains Fuse Box

The rear chamber contains the mains fuse and the front chamber a spare fuse.

NOTE: Ensure replacement fuses bear identical ratings (refer to the technical data)!

CAUTION! Always make sure replacement fuses are of the same type and have the same ratings as the original fuse! To this end, please refer to the fuse ratings shown on the type panel.

MIDI: MIDI Thru
This 5-pin DIN port patches incoming MIDI data from the MIDI in to any other connected MIDI device.

MIDI: MIDI In
This 5-pin DIN port accepts data sent by a MIDI sender (e.g. the ENGL Z9, Z12, Z15 footswitches) or routed from or through another MIDI device.
CAUTION: Before you connect any other MIDI footswitch or effects device, always make sure that the ENGL MIDI Footswitch Power Supply switch is set to the right to avoid damaging the device.

ENGL MIDI Footcontroller Power Supply
This selector activates a MIDI In port power supply for connected ENGL MIDI footswitch. Power is fed to the board via the MIDI circuit. When the switch is set to the left position, power is routed to the MIDI In port' s pin 1 and pin 2. If you choose to use another MIDI footswitch, be sure to set the switch to the right to avoid damaging it. If the footswitch you are using is designed to handle phantom power, consult its operating manual to learn how it is wired (that is, which pins carry its power supply) and what its voltage and current specifications are. If the voltage and current specifications and wiring match, you may set the switch to the left to power this footswitch via the MIDI cable.
NOTE: In order to be able to supply an ENGL MIDI footswitch with power, a 5-pin MIDI cable (all 5 pins must be connected through) must be used.

PLEASE READ AND HEED: Note that a MIDI footswitch may not draw more than 200 mA of current if you want to power it via this port. You must also check and verify if this footswitch is able to handle 11 volts of alternating current (AC)! If you are in any doubt, be sure to consult a specialist, meaning an amp technician or electronics engineer who earns a living with a screwdriver!

Midi Channel, Control Change CC#, Amp Mute

Use this DIP switch to assign the MIDI channel by which the amp' s MIDI system will receive program change commands and specific MIDI controller commands assigned to certain amp functions. Your choices are the standard 16 MIDI channels numbered from 00 to 15, as well as OMNI mode, whereby all MIDI data is received regardless of the MIDI send channel

MIDI-CHANNEL	S1	S2	S3	S4	S5	S6
OMNI	OFF	XX	XX	XX	XX	XX
CH1	ON	OFF	OFF	OFF	OFF	XX
CH2	ON	OFF	OFF	OFF	ON	XX
CH3	ON	OFF	OFF	ON	OFF	XX
CH4	ON	OFF	OFF	ON	ON	XX
CH5	ON	OFF	ON	OFF	OFF	XX
CH6	ON	OFF	ON	OFF	ON	XX
CH7	ON	OFF	ON	ON	OFF	XX
CH8	ON	OFF	ON	ON	ON	XX
CH9	ON	ON	OFF	OFF	OFF	XX
CH10	ON	ON	OFF	OFF	ON	XX
CH11	ON	ON	OFF	ON	OFF	XX
CH12	ON	ON	OFF	ON	ON	XX
CH13	ON	ON	ON	OFF	OFF	XX
CH14	ON	ON	ON	OFF	ON	XX
CH15	ON	ON	ON	ON	OFF	XX
CH16	ON	ON	ON	ON	ON	XX

MIDI controller access permission set with the small switch labeled '6' on the larger piano DIP switch:

Setting the small switch labeled '6' to ON enables the MIDI controller access capability for certain Amp functions. Setting the small switch labeled '6' to OFF disables the MIDI controller access capability for certain Amp functions. As the table indicates, encoding button 1 (S1) switches between Poly and OMNI mode. Bear this in mind for practical applications, because this is a fast way to go from a preset Poly channel to OMNI mode and vice versa.

MIDI Controller (CC#, Amp Mute, etc.)

The small switch labeled '6' on the larger piano DIP switch determines if the amp accepts MIDI commands, e.g. that MIDI controllers #7 can be used to mute the amp. This controller sends the command to activate Amp Mute by a value of 5 or higher. A value of 0 to 4 deactivates the Amp Mute function, thereby unmuting the amp and reactivating at its current MASTER volume setting. The following table lists amp functions and their assigned MIDI controller numbers.

FUNCTION ON THE AMP	MIDI CC#	HEX VALUE
Amp Mute	#7	0x07
Master A/B	#14	0x0E
Modern/Classic	#15	0x0F
Gain Boost & Hi Gain	#22	0x16
Mid Shift & Contour	#23	0x17
Noise Gate	#24	0x18
Presence A/B	#25	0x19
Depth Boost	#26	0x1A
Mega Lo Punch	#27	0x1B
Reverb	#28	0x1C
Bright & Mid Edge	#29	0x1D
FX Loop I/II	#30	0x1E
Serial FX Loop	#31	0x1F

MIDI Logic reset

Pressing the CRUNCH and PRESENCE A/B buttons for 3 seconds simultaneously will reset the logic unit to the factory defaults and clear the MIDI presets created by the user.

Footswitch: Serial Amp Control Port (conventional 6.3mm / ¼" TRS)

The S.A.C. Port accepts the ENGL Z9 (optional available accessory), which enables you to control various amp functions remotely. It is an ENGL proprietary data protocol which allows you to control various functions of the amplifier via an S.A.C. capable footswitch like the ENGL Z9. To learn if a given feature or function may be controlled remotely, refer to its description herein.

CAUTION: Connect only the ENGL Z9 to this 6.3 mm / ¼" TRS jack! Connecting any other switching device may damage it and/or the amps circuitry!

Footswitch: Clean – Crunch / Lead I – Lead II (conventional 6.3mm / ¼" TRS)
Use this jack to connect the ENGL Z4 Footswitch (conventional footswitch with two switching functions; 2 x off/on – Single Pole Single Throw or SPST for short).
Tip: switching between the Clean and the Lead channels (top section / bottom section)
Ring: switching between Clean/Crunch and Lead I/Lead II.
Default (no footswitch connected): Clean Channel is activated.
» Once a footswitch is connected to this jack, the S.A.C. Port is disabled the and the respective function of the push button on the front panel is deactivated.

Noise Gate Threshold
With this control you can set the threshold of the Noise Gate. The further the knob is turned clockwise, the higher the threshold at which background noise is cut off. The Noise Gate can only be activated in the Crunch, Lead I and Lead II channel.
» This feature can be controlled via MIDI (MIDI program change and/or control change CC#24).
» This feature can be controlled by the Z9 footswitch (optional available accessory) via the Serial Amp Control (S.A.C.) Port.

Serial FX Loop
In the signal path, the Serial FX loop is located post preamp and before the poweramp Master controls.
» This feature can be controlled via MIDI (MIDI program change and/or control change CC#31).
» This feature can be controlled by the Z9 footswitch (optional available accessory) via the Serial Amp Control (S.A.C.) Port.

FX Loop I
In the signal path, the FX loop I is located post preamp and before the poweramp Master controls. It is blendable from parallel to serial by the FX I balance knob.
» This feature can be controlled via MIDI (MIDI program change and/or control change CC#30).
» This feature can be controlled by the Z9 footswitch (optional available accessory) via the Serial Amp Control (S.A.C.) Port.

FX Loop I Send
Connect the FX Loop I Send (output) to a signal processor´s input or an effect pedal´s input or return jack using the shortest possible shielded cord (conventional 6,3mm / ¼" TS). Another option is to connect this output through an outboard filter to emulate a speaker or for example into the ENGL CABLOADER (IR-Loader with an integrated microphone and poweramp simulation), and feed this externally processed signal to a recording device or PA system.

FX Loop I Return

Connect the FX Loop I Return (poweramp input) to a signal processor´s output or an effect pedal´s output/send jack using the shortest possible shielded cord (conventional 6,3mm / ¼" TS).

FX Loop I Balance

FX mix control for FX Loop I. When the knob is set to Dry, the amp signal is routed through with no processed signal (0% wet balance) added to the mix. Twist the knob clockwise to blend in the processed signal (parallel/passive, wet balance 1-99%, depending on knob position). When the knob arrives at the Effect position, only the wet signal (i.e.the processed signal generated by the connected effect device) is patched to the poweramp (serial, 100% wet).

NOTE: Set this knob to Dry when the FX Loop is not in use! Settings between 9 and 3 o' clock position reduce the signal level. In the event of contact corrosion of the FX Return socket, volume fluctuations may occur.

FX Loop II

In the signal path, the FX loop II is located post preamp and before the poweramp Master controls. It is blendable from parallel to serial by the FX II balance knob.

» This feature can be controlled via MIDI (MIDI program change and/or control change CC#30).

» This feature can be controlled by the Z9 footswitch (optional available accessory) via the Serial Amp Control (S.A.C.) Port.

FX Loop II Send

Connect the FX Loop II Send (output) to a signal processor´s input or an effect pedal´s input or return jack using the shortest possible shielded cord (conventional 6,3mm / ¼" TS). Another option is to connect this output through an outboard filter to emulate a speaker, or for example into the ENGL CABLOADER (IR-Loader with an integrated microphone and poweramp simulation), and feed this externally processed signal to a recording device or PA system.

FX Loop II Return

Connect the FX Loop II Return (poweramp input) to a signal processor´s output or an effect pedal´s output/send jack using the shortest possible shielded cord (conventional 6,3mm / ¼" TS).

FX Loop II Balance

FX mix control for FX Loop II. When the knob is set to Dry, the amp signal is routed through with no processed signal (0% wet balance) added to the mix. Twist the knob clockwise to blend in the processed signal (parallel/passive, wet balance 1-99%, depending on knob position). When the knob arrives at the Effect position, only the wet signal (i.e. the processed signal generated by the connected effect device) is patched to the poweramp (serial, 100% wet).

NOTE: Set this knob to Dry when the FX Loop is not in use! Settings between 9 and 3 o' clock position reduce the signal level. In the event of contact corrosion of the FX Return socket, volume fluctuations may occur.

Power Tube Monitor

This red LED lights up to indicate one of the internal power tube fuses (each tube is fused separately) has blown. You can continue playing, but the amp's performance will be diminished. Normally the loss of a power tube results in an unbalanced signal. Be sure to have the amp checked by a professional as soon as possible; the fuse probably blew because of a defective power tube. Once a fuse has blown, it must be replaced by a new fuse.

Line Output – 0 dB

This Line Output port taps the power amp' s output to provide a line out signal configured at a level of about 0 dB. The frequency response is identical to the power amp output signal. In other words, its frequency response is not compensated or corrected. You can feed this signal to another linear power amp. Another option is to patch it through an outboard filter to emulate a speaker, or for example into the **ENGL CABLOADER** (IR-Loader with an integrated microphone and poweramp simulation), and feed this externally processed signal to a recording device or PA system.

» The Line Output – 0 dB is directly tapped from the Poweramp Output meaning that it is only active when the amp is not in Stand By mode. Make sure that a load is connected to the speaker output otherwise the amplifier may suffer serious damage. In Stand By mode, this output is deactivated.

Poweramp Output, 4 Ohms Parallel

1. One 4 Ohm cab connected to the left jack (1 x 4 Ohm).
2. Two 8 Ohm cabs connected to both jacks (2 x 8 Ohm).

Poweramp Output, 8 Ohms Parallel

1. One 8 Ohm cab connected to the left jack (1 x 8 Ohm).
2. Two 16 Ohm cabs connected to both jacks (2 x 16 Ohm).

Poweramp Output, 16 Ohms

1. One 16 Ohm cab connected to this jack (1 x 16 Ohm).

Cabinet options

1. One 4 Ohm cabinet:
One 4 Ohm Cabinet connected to a 4 Ohm Poweramp Output

2. Two 8 Ohm cabinets:
Two 8 Ohm Cabinets connected to both 4 Ohm Poweramp Outputs

3. One 8 Ohm Cabinet:
One 8 Ohm Cabinet to the left 8 Ohm Poweramp Output.

4. Two 16 Ohm cabinets:
Two 16 Ohm cabinets connected to both 8 Ohm Poweramp Outputs.

5. One 16 Ohm Cabinet:
One 16 Ohm Cabinet connected to the 16 Ohm Poweramp Output.

6. One 8 Ohm Cabinet and one 16 Ohm Cabinet:
The 8 Ohm Cabinet connected to the left 4 Ohm Poweramp Output in combination and the
16 Ohm Cabinet connected to the left 8 Ohm Poweramp Output.

Important Note: We cannot stress enough the importance of proper impedance matching when connecting one or more cabinets to your amp. Impedance mismatching can damage the poweramp! Always check the impedance of the connected cabinet to make sure it matches the output impedance of the amplifier!

Controlling the Amp with a Z9 footswitch by the S.A.C. Port

1. Connect the Z9 footswitch to the amplifiers S.A.C. Port.
» A conventional stereo 6.3mm / ¼" TRS cable must be used.
2. Power the amplifier on. The Z9 is powered by the amp through the connection cable.
» Immediately after powering the amp on, the serial amp control mode is indicated by a running light of LED 1 to LED 4 in the running direction from right to left, both LEDs, LED 5 and LED 6 are flashing steadily. In this mode of operation you can control up to 4 channels (alternatively 2 channels + the respective gain setting; Channel 1 Gain Lo, Channel 1 Gain Hi, Channel 2 Gain Lo, Channel 2 Gain Hi) directly with the buttons Channel 1 to Channel 4 and two additional sound-shaping and special functions with the buttons Function 1 and Function 2.

Configuration of the Z9 Footswitch Function 1 and Function 2 buttons

Configuration of a sound-shaping and special function to button Function 1 via the respective setup routine:

1. Simultaneously press and hold the buttons Channel 1 and Function 1 until the LED above the Function 1 button flashes.
2. Press Function 1 again to confirm and enter the setup routine. LED 5 above the Function 1 button lights up.

» The currently to this button assigned function on the amp is activated and shown by the respective LED (LED 1, LED 2, LED 3, LED 4) above the Channel buttons. The respective LED lights up or flashes to indicate the amps current sound-shaping and special function assignment.

3. Locate the S.A.C. configuration table in the respective Operator´s Manual of the applicable amplifier.

» Now the desired sound-shaping and special function can be selected with one of the four buttons Channel 1, Channel 2, Channel 3 or Channel 4 on the Z9 using the configuration table.

Programming the Z9 Footswitch Function 1 button

1. Press the Channel X button until the LED above the Channel X button lights up or flashes.

» The function on the amplifier can then be activated or deactivated by pressing the Function 1 button. The assignment has not yet been saved.

2. Save the assignment by pressing the Function 2 (not Function 1) button. The LED above the Function 2 button flashes once briefly as confirmation.

Example: Assignment of the sound or special function **Noise Gate** to the Function 1 button

1. Press the Channel 4 button until the LED above the Channel 4 button flashes.

» By pressing the Function 1 button, the function on the amplifier can be activated or deactivated immediately. The assignment has not yet been saved at this point.

2. Save the assignment by pressing the Function 2 button (not Function 1). The LED above the Function 2 button lights up once briefly as confirmation.

Configuration of a sound-shaping and special function to button Function 2 via the respective setup routine:

1. Simultaneously press and hold the buttons Channel 1 and Function 2 until the LED above the Function 2 button flashes.
2. Press Function 2 again to confirm and enter the setup routine. LED 6 above the Function 2 button lights up.

» The currently to this button assigned function on the amp is activated and shown by the respective LED (LED 1, LED 2, LED 3, LED 4) above the Channel buttons. The respective LED lights up or flashes to indicate the amp´s current sound-shaping and special function assignment.

3. Locate the S.A.C. configuration table in the respective Operator´s Manual of the applicable amplifier.

» Now the desired sound-shaping and special function can be selected with one of the four buttons Channel 1, Channel 2, Channel 3 or Channel 4 on the Z9 using the configuration table.

Programming the Z9 Footswitch Function 2 button

1. Press the Channel X button until the LED above the Channel X button lights up or flashes.
» The function on the amplifier can then be activated or deactivated by pressing the Function 1 button. The assignment has not yet been saved.
2. Save the assignment by pressing the Function 2 (not Function 1) button. LED 6 above the Function 2 button flashes once briefly as confirmation.

Example: Assignment of the sound or special function **Presence A/B** to the Function 2 button

1. Press the Channel 1 button until the LED above the Channel 1 button lights up permanently.
» By pressing the Function 2 button, the function on the amplifier can be activated or deactivated immediately. The assignment has not yet been saved at this point.
2. Save the assignment by pressing the Function 1 button (not Function 2). The LED above the Function 1 button lights up once briefly as confirmation.

Z9 Footswitch S.A.C. configuration table for the amps sound-shaping and special functions to Function 1 and Function 2:

BUTTON	FUNCTIONS ON THE AMP	SETUP	INDICATION	S.A.C.
Function 1	Master A/B	1: Channel 1	LED 1 lights up	F1-1
Function 1	Modern/Classic	1: Channel 2	LED 2 lights up	F1-2
Function 1	none	1: Channel 3	LED 3 lights up	F1-3
Function 1	none	1: Channel 4	LED 4 lights up	F1-4
Function 1	Tube Driver active	1: Channel 1	LED 1 flashes	F1-5
Function 1	Gain Boost & Hi Gain	1: Channel 2	LED 2 flashes	F1-6
Function 1	Mid Shift & Contour	1: Channel 3	LED 3 flashes	F1-7
Function 1	Noise Gate	1: Channel 4	LED 4 flashes	F1-8
Function 2	Presence A/B	2: Channel 1	LED 1 lights up	F2-1
Function 2	Depth Boost	2: Channel 2	LED 2 lights up	F2-2
Function 2	Mega Lo Punch	2: Channel 3	LED 3 lights up	F2-3
Function 2	Reverb	2: Channel 4	LED 4 lights up	F2-4
Function 2	Tube Driver EQ active	2: Channel 1	LED 1 flashes	F2-5
Function 2	Bright & Mid Edge	2: Channel 2	LED 2 flashes	F2-6
Function 2	FX Loop I/II	2: Channel 3	LED 3 flashes	F2-7
Function 2	Serial FX Loop	2: Channel 4	LED 4 flashes	F2-8

Comments:

1st column: This indicates which function button of the Z9 footswitch can be assigned to the sound functions listed in column 2.

2nd column: Sound functions of the amp that can be controlled via the Z9 footswitch.

3rd column: Here you will find the configuration or the desired setting of the Z9 footswitch to control the corresponding sound function on the amplifier.

Thereby means: The first digit is the Function Setup Routine, where 1 stands for Function 1 Setup and 2 stands for Function 2 Setup; Channel 1 to Channel 4 designates the corresponding button on the Z9 footswitch with which the setting is made.

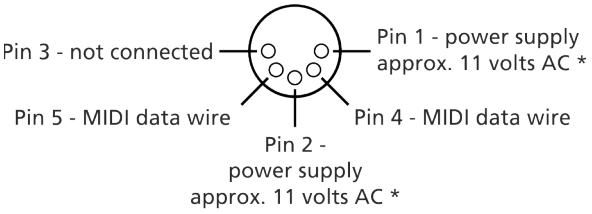
4th column: Display of the currently set configuration or the newly selected configuration.

5th column: This designation of the configuration is used to describe the functionality in some places in the Z9 Footswitch manual.

For a detailed description of the functionality, please refer to the Z9 footswitch operators manual.

WIRING OF PRINCIPAL CONNECTORS

MIDI In, Din Connector

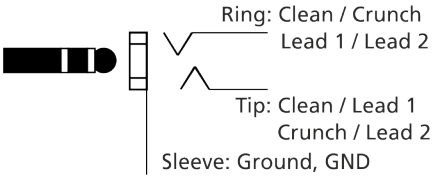


*: AC voltage is routed to Pin 1 and 2 only when
slide switchis set to ENGL MIDI Footcontroller.

Z4 Footswitch (Dual Footswitch) and Z9 Footswitch (Serial Amp Control Port) cable assignment

Z4 Footswitch
(Dual Footswitch)

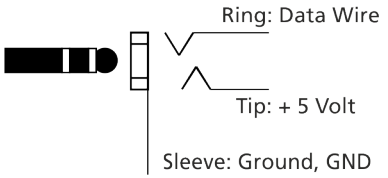
Stereo
6.3 mm (¼") Plug



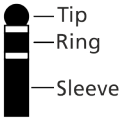
ATTENTION! Use a stereo cable only.
Connect Z9 Footwitch only.

Z9 Footswitch
(S.A.C. Footswitch)

Stereo
6.3 mm (¼") Plug



ATTENTION! Use stereo cable only!



Stereo
6.3 mm (¼") Plug

TECHNICAL DATA

Output power	approx. 100 Watts
Input sensitivity	
Input:	from -20 dB to approx. 0 dB max.
FX Return	from -20 dB to approx. 0 dB max.
Output level	
FX Send	from -20 dB to approx. 0 dB max.
Line Out	approx. 0 dB / 1 kΩ at nominal power output
Power consumption	approx. 400 Watts (480VA) max.
Fuses	
220 / 230 / 240 supply voltage	2 AT L (T: slow-blow)
100 / 115 / 120 supply voltage	4 AT L (T: slow-blow)
Power Tube Fuses	4 x 0,16 AM (M: medium-blow)
Tubes	
V1	ENGL ECC83 First Quality (FQ)
V2 / V3 / V4 / V5	ENGL ECC83 Selected
V6 / V7 / V8 / V9	ENGL EL34 Hand-Matched Quartet (EL34 Version) ENGL 6L6 Hand-Matched Quartet (6L6 Version)

Important: Replace these with fuses with the same type and rating only!

System interfaces:

MIDI:	Asynchronous data protocol according to the MIDI standard MIDI program changes 0 – 127 MIDI channels 1 – 16 MIDI controller #7, #14, #15, #22, #23, #24, #25, #26, #27, #28, #29, #30, #31 value 0 – 4 function deactivated value >/= 5 function activated
Serial Amp Control (S.A.C.):	Proprietary ENGL asynchronous data protocol
Dimension	71cm x 28cm x 29cm / 27,95in x 11,02in x 11,42in
Weight	approx. 23,5kg / 51,8lbs

A FEW COMMENTS ON TUBE AMPLIFIERS

Be sure to read this section before powering the amp up!

This amp´s input is extremely sensitive due to its high gain factor. In combination with inherent microphonics of tubes at certain settings this can elicit powerful feedback from the speakers – even without a guitar being connected!

This occurs primarily when Crunch and Lead channels (meaning all channels whose preamp is easily overdriven) are activated and the following settings are dialed in:

- Gain and/or Lead Gain knob past the 12 o´clock position
- Treble knob past the 12 o´clock position
- Crunch/Lead Volume knob past the 12 o´clock position
- Presence knob past the 12 o´clock position

Avoid setting the afore mentioned knobs to extreme positions (that is, combinations in which several of these knobs are set past the 12 o´clock position). This type of configuration can cause considerable feedback that could severely damage your hearing and destroy speakers.

If you set the Volume or Master knobs to higher volume levels, always make sure to back off amplification levels to prevent feedback by turning the Lead channel Gain knobs down. The same applies to these channel settings of the Treble and Presence controls.

Before you power the amp up, take a moment to check out the control panel and make sure that these knobs are not set to any configuration similar to the one described above!

A FEW WORDS ON BACKGROUND NOISE IN TUBE AMPLIFIERS

You may hear slight background noise right after you power a tube amp up or even while you are operating. It manifests as intermittent hissing or sizzling, crackling, or popping noises. Caused by tubes, this type of noise may even occur with brand new tubes.

The noise is particularly noticeable in high-gain Lead channels. This is because the Lead channels have a very high gain factor and amplify the noise along with the usable guitar signal.

It is not necessary to swap tubes if you encounter this kind of noise every now and then, though you may consider replacing tubes if it becomes a constant companion.

TROUBLESHOOTING

The output volume fluctuates or drops:

- Take all effect devices (in front of the preamp and FX Loop) out of the signal chain.
- Check all used cables.
- Check the used guitar or use another guitar.
- Use a patch or guitar cable to patch he FX Send with the FX Return jack.
- Try using an external and functional poweramp with the preamp of the amp (FX Send connected to an external poweramp) to exclude a problem with the amps internal preamp.
- Try using an external and functional preamp with the poweramp of the amp (FX Return connected to an external preamp) to exclude a problem with the amps poweramp.

The amp is not providing a proper output signal / no or low sound is emanating from the speaker:

- Is at least one speaker connected to the speaker outputs?
- Is the poweramp activated (Stand By switch to ON)?
- Are all cords (guitar, effects and speaker) connected properly and are they functional?
- Take all effect devices (before the preamp, FX Loop) out of the signal chain.
- Is the Noise Gate activated? (Relevant only, if the amplifier is equipped with a Noise Gate).
- Are the Master knob and the Gain and Volume knobs set to a value higher than 0? If any of these knobs is set to zero, no signal is routed to the amps output.

The speaker is emitting humming noises:

- The amp and mains ground are not connected properly or are altogether disconnected. Please have this checked by a technician.
- Cords connected to the input or FX Loop may not be shielded properly. Replace them to check if this is indeed the case.
- The amp or speaker cords may be picking up interference from powerful magnetic fields (ire., of nearby power transformers or electrical motors). Reposition the amp and connector cables.
- The amp or speaker cords may be picking up radio signals. E.g. from activated mobile phones or powerful local transmitting stations nearby. Switch off mobile phones while troubleshooting noise problems.

Please contact us via e-mail: service@engl-amps.com before shipping a product to us.

The more precise the error description is, the better our service team can help you. It is best to send us a photo of the control settings and a video recording. A detailed description of the error also helps us to isolate and locate the problem faster.

- Which channels are affected? Which functions are activated?
- In which knob positions does the problem occur?
- Are you using effects devices before the input or in the F-Loop?
- Does the problem occur in standby mode (noise issues)?
- What equipment is used in detail?

Packaging

Please make sure to use suitable packaging to ensure undamaged transport (use original PKG). To unfold the full protective function of the packaging, the outer packaging, the device and the inner packaging must form a single unit. This is the only way to ensure that the device survives the transport route undamaged. Please check used packaging for tears, signs of compression, pressure marks, perforations or other damage before use. Please do not use damaged packaging. Note that a flight case is not a suitable shipping packaging and is therefore not accepted. Please never pack devices together (e.g. Z9 Footswitch + E670 Head), but send them separately. As it is our responsibility to use suitable shipping packaging for return shipping, we reserve the right to use a new original packaging if necessary and must also charge for this.

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