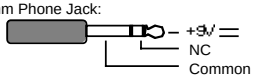
# Operating instructions for the EES M3 GPI8.

**Extent of delivery.**
M3 GPI8 with EES plug-in power supply NG4
This instruction.

**Instructions for use.**
For a troublefree operation the MIDI line should not be longer than 3 m.
Static discharges or interference pulses can damage the normal operation of the EES M3 GPI8 in rare cases. If the M3 GPI8 should not function anymore "normally" then, the unit can be resetted by a short separation from the power supply.
With the operation of the M3 GPI8 the precautions usual for electronic devices are to be considered: Do not use the device in moist environment, with high temperatures or in extremely dusty environment. The case may be opened only by a technican.
For cleaning only a dry cloth should be used, solvent-containing cleaners can damage the surface of the device.
The M3 GPI8 corresponds to the CE Definitions.

**Connections.**
The M3 GPI8 needs a supply voltage of 9V-12V= ( a maximum of 100 mA ) preferably from the delivered plug-in EES power supply.

Wiring Diagram 3,5mm Phone Jack:




The EES M3 GPI8 has one MIDI In, two parallel MIDI Out and a MIDI Thru jack.
At the MIDI Thru the unchanged MIDI In data is available .
The MIDI Out of a keyboard or a sequencer is connected with the MIDI In of the M3 GPI8.
One MIDI Out of the M3 GPI8 is connected with the sound module and/or with the executive MIDI device. At the second MIDI Out further MIDI devices can be connected.
The inputs of the M3 GPI8 are led out onto a 9 pin dsub jack.
The pins 1 to 8 correspond to the inputs 1 to 8, pin 9 is the common ground contact for all switches. The switch must switch approx. 2 mA, in the closed state his max. resistance may be up to 100 ohm.

**Function.**
The M3 GPI8 sends MIDI events for the closing and/or opening of everyone of his 8 contacts according to the selected table. One of 16 possible tables is selected with the 16-position rotary switch.

**MIDI Implementation:**
Soft Thru. The MIDI event caused by the switch operation is added to the data stream of the MIDI In.

## M3 GPI Tables

All inputs are related to common ground ( **M** pin 9 ) !
The MIDI command becomes transmitted in each case during the level **change !**
The tables are listed in hexadezimal and in decimal spelling entered in the *hex* / dec form.
The table number corresponds in each case to the switch position on the front panel of the M3 GPI8.

**Table 1**, event: Note C, C#, D ... on the MIDI channel **1**, **note 36 - 43**.
The switching of a contact causes in each case a MIDI note. During the closing of a contact a note on, during the opening a note off command on the MIDI channel 1 becomes transmitted. The dsub pin's 1 to 8 are assigned with the MIDI note numbers 36-43 ( = C,C#...G ), that corresponds to notes in the 1st octave on a 5-octaves keyboard.

| **Input number**<br>**Pin = DSub9 jack** | **Switch Contact >**<br>**Level change to >** | | | closed<br>Low | opened<br>High |
|---|---|---|---|---|---|
| | **nn** | **Hex** | **Dec** | **vv** | **vv** |
| 1 | C | *24* | 36 | *40* / 64 | 00 |
| 2 | C# | *25* | 37 | *40* / 64 | 00 |
| 3 | D | *26* | 38 | *40* / 64 | 00 |
| 4 | D# | *27* | 39 | *40* / 64 | 00 |
| 5 | E | *28* | 40 | *40* / 64 | 00 |
| 6 | F | *29* | 41 | *40* / 64 | 00 |
| 7 | F# | *2A* | 42 | *40* / 64 | 00 |
| 8 | G | *2B* | 43 | *40* / 64 | 00 |

**Table 2**, event: Note C, C#, D ... on the MIDI channel **1**, **note 60 - 67**.
As table 1, however notes 60-67, that corresponds to notes in the 3rd octave on a 5-octaves keyboard.

| **Input number**<br>**Pin = DSub9 jack** | **Switch Contact >**<br>**Level change to >** | | | closed<br>Low | opened<br>High |
|---|---|---|---|---|---|
| | **nn** | **Hex** | **Dec** | **vv** | **vv** |
| 1 | C | *3C* | 60 | *40* / 64 | 00 |
| 2 | C# | *3D* | 61 | *40* / 64 | 00 |
| 3 | D | *3E* | 62 | *40* / 64 | 00 |
| 4 | D# | *3F* | 63 | *40* / 64 | 00 |
| 5 | E | *40* | 64 | *40* / 64 | 00 |
| 6 | F | *41* | 65 | *40* / 64 | 00 |
| 7 | F# | *42* | 66 | *40* / 64 | 00 |
| 8 | G | *43* | 67 | *40* / 64 | 00 |

**Table 3**, event: Note C, D, E ... on the MIDI channel **2**, **note 48 - 60**.
As table 1, however notes 48-60 on the MIDI channel 2 in whole tone steps ( only white keys ), that corresponds to the 2nd octave on a 5-octaves keyboard.

| **Input number**<br>**Pin = DSub9 jack** | **Swich Contact >**<br>**Level change to >** | | | closed<br>Low | opened<br>High |
|---|---|---|---|---|---|
| | **nn** | **Hex** | **Dec** | **vv** | **vv** |
| 1 | C | *30* | 48 | *40* / 64 | 00 |
| 2 | D | *32* | 50 | *40* / 64 | 00 |
| 3 | E | *34* | 52 | *40* / 64 | 00 |
| 4 | F | *35* | 53 | *40* / 64 | 00 |
| 5 | G | *37* | 55 | *40* / 64 | 00 |
| 6 | A | *39* | 57 | *40* / 64 | 00 |
| 7 | H | *3B* | 59 | *40* / 64 | 00 |
| 8 | c | *3C* | 60 | *40* / 64 | 00 |

**Table 4**, event: Note C, C#, D ... on the MIDI channel **1**, **note of 36-43 Off/On**.
As table 1, however the event is exchanged for opening and closing the contact !

| **Input number**<br>**Pin = DSub9 jack** | **Switch Contact >**<br>**Level change to >** | | | closed<br>Low | opened<br>High |
|---|---|---|---|---|---|
| | **nn** | **Hex** | **Dec** | **vv** | **vv** |
| 1 | C | *24* | 36 | 00 | *40* / 64 |
| 2 | C# | *25* | 37 | 00 | *40* / 64 |
| 3 | D | *26* | 38 | 00 | *40* / 64 |
| 4 | D# | *27* | 39 | 00 | *40* / 64 |
| 5 | E | *28* | 40 | 00 | *40* / 64 |
| 6 | F | *29* | 41 | 00 | *40* / 64 |
| 7 | F# | *2A* | 42 | 00 | *40* / 64 |
| 8 | G | *2B* | 43 | 00 | *40* / 64 |

**Table 5**, event: 2 notes On/Off Off/On and controllers on the MIDI channel **1**.
This table exists of different kinds of MIDI-events on the MIDI.channel

| **Input number**<br>**Pin = DSub9 jack** | **Swich Contact >**<br>**Level change to >** | | | closed<br>Low | opened<br>High |
|---|---|---|---|---|---|
| | **nn** | **Hex** | **Dec** | **vv** | **vv** |
| 1 | C | *24* | 36 | *40* / 64 | 00 |
| 2 | D | *26* | 38 | *40* / 64 | 00 |
| 3 | E | *28* | 40 | 00 | *40* / 64 |
| 4 | F | *29* | 41 | 00 | *40* / 64 |
| | **cc** | | | | |
| 5 | Modulation | *01* | 01 | *40* / 64 | 00 |
| 6 | Modulation | *01* | 01 | *7F* / 127 | 00 |
| 7 | Sustain | *40* | 64 | *7F* / 127 | 00 |
| 8 | Sustain | *40* | 64 | 00 | *7F* / 127 |

**Table 6**, event: Various realtime commands MMC=MIDI Machine Control.

| **Input number**<br>**Pin = DSub9 jack** | **Switch Contact >**<br>**Level change to >** | closed<br>Low | opened<br>High |
|---|---|---|---|
| | **Event** | | |
| 1 | Start | Start | -- |
| 2 | Stop | Stop | -- |
| 3 | Continue | Continue | -- |
| 4 | Start / stop | Start | Stop |
| 5 | MMC start (deferred) | Start | -- |
| 6 | MMC stops | Stop | -- |
| 7 | MMC tracing | Tracing | -- |
| 8 | Punch | In | Out |

**Table 7**, event: Different controller and programchanges. For example: Korg / Roland.
This table exists of 8 programchange commands, one controller event and start/stop. It fits particularly different Roland accompaniment-automatism ( Changeover between rhythm variations ).

| **Input number**<br>**Pin = DSub9 jack** | **Switch Contact >**<br>**Level change to >** | | closed<br>Low | opened<br>High |
|---|---|---|---|---|
| | **Channel** | **Event** | **vv** | **vv** |
| 1 | 10 | Program Change | *50* / 80 | -- |
| 2 | 10 | | *51* / 81 | -- |
| 3 | 10 | | *52* / 82 | -- |
| 4 | 10 | | *53* / 83 | -- |
| 5 | 10 | | *54* / 84 | -- |
| 6 | 10 | | *55* / 85 | -- |
| 7 | 1 | Controller 50 | *7F* / 127 | 00 |
| 8 | -- | Start/Stop | Start | Stop |

**Table 8**, event: Programchanges 1-8 (O2R / O3D scenes).
The programchanges 1 to 8 on the MIDI channel 1 can change over for example between the scenes 1 to 8 of the O2R or O3D, so that the scenes can be called up by remote control.

| **Input number**<br>**Pin = DSub9 jack** | **Switch Contact >**<br>**Level change to >** | | closed<br>Low | opened<br>High |
|---|---|---|---|---|
| | **Channel** | | **No.** | **vv** |
| 1 | 1 | Program | 1 | -- |
| 2 | 1 | Program | 2 | -- |
| 3 | 1 | Program | 3 | -- |
| 4 | 1 | Program | 4 | -- |
| 5 | 1 | Program | 5 | -- |
| 6 | 1 | Program | 6 | -- |
| 7 | 1 | Program | 7 | -- |
| 8 | 1 | Program | 8 | -- |

**Table 9**, event: O2R Micro Line Mute, O2R system channel 1.
Specific O2R System-Exclusive-Commands, that switches the Mic/Line Mute 1 to 8 on and off .

| **Input number**<br>**Pin = DSub9 jack** | **Switch Contact >**<br>**Level change to >** | closed<br>Low | opened<br>High |
|---|---|---|---|
| 1 | Mic/Line 1 Mute | On | Off |
| 2 | Mic/Line 2 Mute | On | Off |
| 3 | Mic/Line 3 Mute | On | Off |
| 4 | Mic/Line 4 Mute | On | Off |
| 5 | Mic/Line 5 Mute | On | Off |
| 6 | Mic/Line 6 Mute | On | Off |
| 7 | Mic/Line 7 Mute | On | Off |
| 8 | Mic/Line 8 Mute | On | Off |

**Table 10**, event: O2R Micro on sum, O2R system channel 1.
As table 9 for the O2R, however here will be switched Mic to Stereo 1 to 8.

| **Input number**<br>**Pin = DSub9 jack** | **Switch Contact >**<br>**Level change to >** | closed<br>Low | opened<br>High |
|---|---|---|---|
| 1 | Mic to ST 1 Mute | On | Off |
| 2 | Mic to ST 2 Mute | On | Off |
| 3 | Mic to ST 3 Mute | On | Off |
| 4 | Mic to ST 4 Mute | On | Off |
| 5 | Mic to ST 5 Mute | On | Off |
| 6 | Mic to ST 6 Mute | On | Off |
| 7 | Mic to ST 7 Mute | On | Off |
| 8 | Mic to ST 8 Mute | On | Off |

**Table 11**, event: Mute 4* O2R Micro Line Mute, 4*Tape Mute, O2R system channel 1.
As table 9 for the O2R, however only the Mic/Line Mute 1 to 4 are switched on and off here, input 5 to 8 switches Tape Mute 1 to 4 on and off.

| **Input number**<br>**Pin = DSub9 jack** | **Switch Contact >**<br>**Level change to >** | closed<br>Low | opened<br>High |
|---|---|---|---|
| 1 | Mic/Line Mute 1 | On | Off |
| 2 | Mic/Line Mute 2 | On | Off |
| 3 | Mic/Line Mute 3 | On | Off |
| 4 | Mic/Line Mute 4 | On | Off |
| 5 | Tape Mute 1 | On | Off |
| 6 | Tape Mute 2 | On | Off |
| 7 | Tape Mute 3 | On | Off |
| 8 | Tape Mute 4 | On | Off |

**Table 12**, event: Controller on the MIDI channel **1** (B0 cc vv).
The switching of a contact causes in each case a MIDI controller-event. During the closing of a contact a controller on command, during the opening a controller off command will be transmitted on the MIDI channel 1. The dsub pin's 1 to 8 are assigned to the controller numbers 36-43.

| **Input number**<br>**Pin = DSub9 jack** | **Switch Contact >**<br>**Level change to >** | | closed<br>Low | opened<br>High |
|---|---|---|---|---|
| | **cc Hex** | **Dec** | **vv** | **vv** |
| 1 | *24* | 36 | *7F* / 127 | 00 |
| 2 | *25* | 37 | *7F* / 127 | 00 |
| 3 | *26* | 38 | *7F* / 127 | 00 |
| 4 | *27* | 39 | *7F* / 127 | 00 |
| 5 | *28* | 40 | *7F* / 127 | 00 |
| 6 | 29 | 41 | *7F* / 127 | 00 |
| 7 | *2A* | 42 | *7F* / 127 | 00 |
| 8 | *2B* | 43 | *7F* / 127 | 00 |

**Table 13**, event: Controller on the MIDI channel **1** (B0 cc vv)
This table is especially designed for the MA Lightcommander.

| **Input number**<br>**Pin = DSub9 jack** | **Switch Contact >**<br>**Level change to >** | | | closed<br>Low | opened<br>High |
|---|---|---|---|---|---|
| | **cc** | **Hex** | **Dec** | **vv** | **vv** |
| 1 | Chaser 0 | *3F* | 63 | 00 | -- |
| 1 | Chaser Off | *15* | 21 | -- | 00 |
| 2 | Chaser 1/2 | *3F* | 63 | *01* / 01 | *02* / 02 |
| 3 | Chaser 3/4 | *3F* | 63 | *03* / 03 | *04* / 04 |
| 4 | Mem-Reg 14 | *73* | 115 | *7F* / 127 | 00 |
| 5 | Mem-Reg 15 | *74* | 116 | *7F* / 127 | 00 |
| 6 | Mem-Reg 16 | *75* | 117 | *7F* / 127 | 00 |
| 7 | Master Reg | *77* | 119 | *7F* / 127 | 00 |
| 8 | Sequencer Off | *1A* | 26 | 00 | -- |

**Table 14**, event: Different controllers on MIDI channel 16 (BF cc vv)
For example to operate pro-tools as CS10 simulation (MIDI channel 16).

| **Input number**<br>**Pin = DSub9 jack** | **Switch Contact >**<br>**Level change to >** | | | closed<br>Low | opened<br>High |
|---|---|---|---|---|---|
| | **Function cc** | **Hex** | **Dec** | **vv** | **vv** |
| 1 | Stop | *15* | 31 | *7F* / 127 | 00 |
| 1 | Play | *16* | 32 | *7F* / 127 | 00 |
| 2 | Record | *17* | 33 | *7F* / 127 | 00 |
| 3 | FF Left Wheel | *18* | 34 | *7F* / 127 | 00 |
| 4 | FF Right Wheel | *19* | 35 | *7F* / 127 | 00 |
| 5 | To Mute 1 | *00* | 00 | *7F* / 127 | 00 |
| 6 | To Mute 2 | *01* | 01 | *7F* / 127 | 00 |
| 7 | To Mute 3 | *02* | 02 | *7F* / 127 | 00 |
| 8 | To Mute 4 | *03* | 03 | *7F* / 127 | 00 |

**Table 15**, event: Song select 1-8 (F3 nn).
In this table only during the closing of the contact, song select numbers from 0 to 7 will be transmitted.

| **Input number**<br>**Pin = DSub9 jack** | **Switch Contact >**<br>**Level change to >** | closed<br>Low | opened<br>High |
|---|---|---|---|
| 1 | Song-number 1 | 0 | -- |
| 2 | Song-number 2 | 1 | -- |
| 3 | Song-number 3 | 2 | -- |
| 4 | Song-number 4 | 3 | -- |
| 5 | Song-number 5 | 4 | -- |
| 6 | Song-number 6 | 5 | -- |
| 7 | Song-number 7 | 6 | -- |
| 8 | Song-number 8 | 7 | -- |

**Table 16**, event: Volumes for channel 1-7+10 on / off (B**k** 07 7 F / 00). **K**= MIDI channel. With these MIDI data volumes can be switched on the MIDI channels 1-8 to 0 (silent/off) and 127 (loud/on). Closing contact = volume 0, opening contact = volume 127.

| **Input number**<br>**Pin = DSub9 jack** | **Switch Contact >**<br>**Level change to >** | closed<br>Low | opened<br>High |
|---|---|---|---|
| 1 | Channel volume 1 | Off | On |
| 2 | Channel volume 2 | Off | On |
| 3 | Channel volume 3 | Off | On |
| 4 | Channel volume 4 | Off | On |
| 5 | Channel volume 5 | Off | On |
| 6 | Channel volume 6 | Off | On |
| 7 | Channel volume 7 | Off | On |
| 8 | Channel volume 10 | Off | On |

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