MIDIXO

Operation Manual
&
Installation Guide

xo
xo
modular

INTRODUCTION

MIDIXO is a TRS MIDI Swiss Army Knife for your Eurorack synth. It's a simple, functional utility module that can help you use MIDI over 3.5mm stereo cables in one of several ways, depending on how its jumpers are configured:

At its simplest, **MIDIXO** can serve as a TRS MIDI A/B converter, allowing devices from manufacturers that use TRS MIDI "Type A" (eg: Make Noise, Korg, Akai) to talk with devices from manufacturers that use TRS MIDI "Type B" jacks (eg: Arturia, Malekko, Novation, Pittsburgh).

MIDIXO is friends with most Expert Sleepers* modules. By using the included 4-pin ribbon cable, **MIDIXO** can serve as a TRS MIDI breakout for modules like *disting mk4*, *disting EX*, *FH-2*, *General CV,* and *ES-9*. The input and output jacks are each independently switchable to allow maximum compatibility with your other gear. **MIDIXO** is best-est friends with *disting.* If you turn on "MIDI Thru" in disting's settings, **MIDIXO** will function as its MIDI breakout when you're using algorithms that accept or generate MIDI. When you're in any "non-MIDI" disting algorithms, **MIDIXO** goes back to being a TRS MIDI A/B converter – without having to reconfigure the jumpers. Thanks, Expert Sleepers*!

Finally, you can pair **MIDIXO** with the Expert Sleepers* MIDI breakout – again using the included 4 pin ribbon cable – to have two independent TRS MIDI / MIDI 5-pin DIN converters!

MIDI TRS?

For as long as we can remember, MIDI has travelled over 5-pin DIN cables. Recently, manufacturers of Eurorack-compatible gear have wanted to move to the slimmer, more familiar, 3.5 mm cabling that we all know and love. But without a standard to guide them, each manufacturer seems to have flipped a coin when deciding which part of the cable's insides would be which. This has left us with two kinds of MIDI over 3.5 mm TRS cables: MIDI TRS A and MIDI TRS B. If you've got gear from Make Noise, Akai, or Korg, it works one way. Novation and Arturia do it the other way. Etcetera. The solution, so far, has involved using the MIDI dongles that come with your gear, leaving you with a chain of cables that looks something like this:

MIDIXO gets rid of the MIDI-middlemen and allows you to directly connect any device with a 3.5 mm MIDI jack to any other device with a 3.5 mm MIDI jack.

PANEL LAYOUT

MIDI In →

MIDI In
A/B →
Switch

MIDIXO

MIDI Out
← A/B
Switch

← MIDI Out
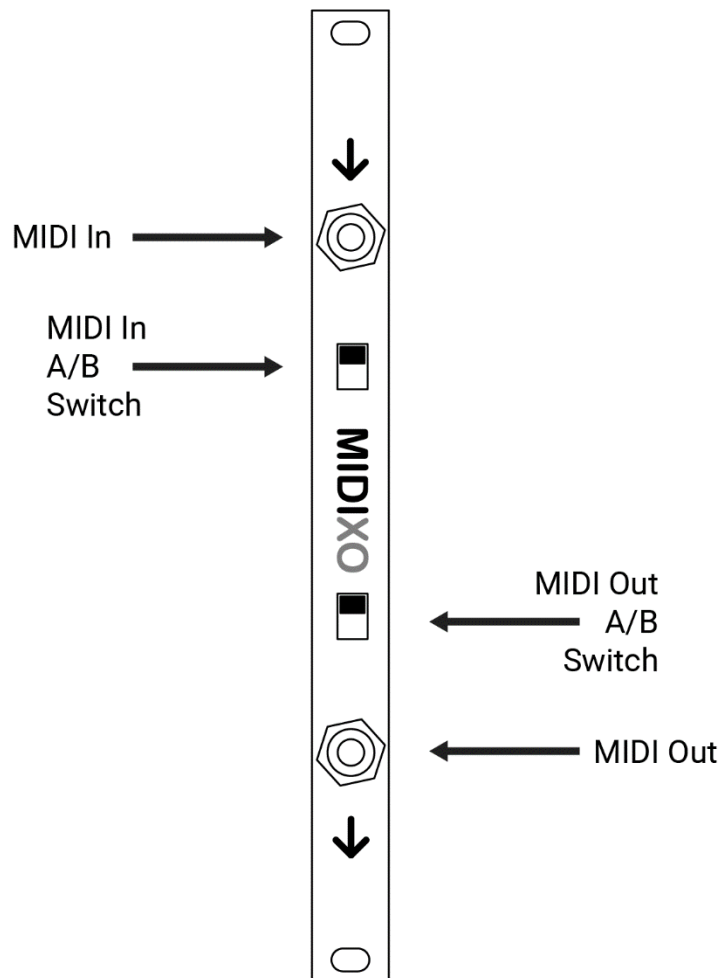
INSTALLATION & OPERATION

The module works in one of several ways, depending on how its jumpers are set.

For a short visual explanation of the different modes and how to configure **MIDIXO** for each mode, see this video: https://youtu.be/cuk8IXdVqC8

They are also described, in more depth, on the next few pages.

MODE 1: STANDALONE TRS MIDI A/B CONVERTER

Let's say you get the bright idea to connect the MIDI output of your Arturia Beatstep Pro to the MIDI input of your Make Noise 0-Coast using a regular old 3.5 mm stereo cable. Could work. Should work. Won't work. But, putting **MIDIXO** between the two devices allows you to crisscross the pins inside the cable, allowing the two to talk to each other without any trouble. (And without having to resort to two clunky dongles and a MIDI 5-pin DIN cable).

To install the module for this mode:

1. Install all 3 jumpers on the printed circuit board.
2. While the 4-pin ribbon cable is not used for this mode, it's recommended that you leave it connected. This will avoid stress on the circuit board connector, caused by installing/removing the cable.

To operate the module in this mode:

1. Plug a stereo audio cable from your device's MIDI output to the module's input jack.
2. Plug a separate stereo cable from the module's output to the MIDI input of your other device.
3. Set each of the module's two switches to different positions to perform conversion from A to B (or vice versa – it works either way).
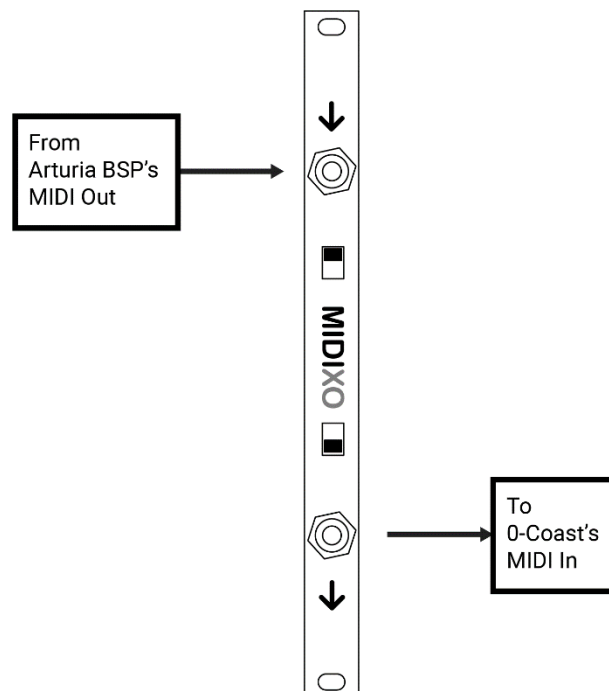
MODE 2: TRS MIDI BREAKOUT FOR EXPERT SLEEPERS* MODULES

Way cooler than the above, is the fact that **MIDIXO** can serve as a TRS MIDI breakout for an Expert Sleepers* *disting mk4*, *disting EX, FH-2, General CV,* or *ES-9* module.

To <u>install</u> the module for this mode:

1. Use the supplied 4-pin ribbon cable to connect the two modules. (The Expert Sleepers* module will have a 4-pin connector labeled either GT2 or GT3 – check your module's manual.) Note which color is connected to pin 1 on **MIDIXO** and make sure that same color is connected to pin 1 on your Expert Sleepers* module.
2. Make sure all 3 jumpers on the printed circuit board are <u>disconnected</u>. You can do this by making sure each jumper is connected to only *one* of its corresponding pins. Or you can remove the jumpers completely from the board. (Don't lose the jumpers – they're smaller than the common size that you've probably got hanging around.)

To <u>operate</u> the module in this mode:

1. Check your module's manual to see what its capabilities are, with respect to sending and receiving MIDI.
2. To send MIDI to your Expert Sleepers* module, plug a stereo audio cable from your device's MIDI output to **MIDIXO**'s input jack
3. To get MIDI out of your Expert Sleepers* module, plug a stereo cable from **MIDIXO**'s output jack to the MIDI input of your other device.

In this mode, the switches have no relationship with each other: the input switch affects the input jack and the output switch affects the output jack.

Note that **MIDIXO** will also work as a TRS MIDI breakout for the *Melisma* by SDS Digital & K. Since the pinout is different, you will need to rearrange the connectors in the 4-pin ribbon cable supplied with **MIDIXO**. Since the headers on the *Melisma* (and *disting*) are optically isolated, there is no harm in getting the order of the wires wrong.

MODE 1+2: DISTING MK4 WITH THRU MIDI

Modes 1 and 2 above are mutually exclusive, depending on how you've set the jumpers. But, if you own a *disting mk4 or EX*, **MIDIXO** can do everything described above – without changing any jumpers. Just turn on "Thru Midi" in your disting's settings.

After that, **MIDIXO** will function as described in Mode 2 above whenever you're using a disting algorithm that accepts or generates MIDI data. When you're using any *other* disting algorithm, **MIDIXO** works as described in Mode 1 (ie: as a converter for two pieces of gear that have trouble being TRS friends.) Thanks, Expert Sleepers*!

MODE 3: DUAL TRS MIDI A/B TO MIDI

Finally, you can pair **MIDIXO** with an Expert Sleepers* MIDI breakout, to gain two independent TRS independent TRS MIDI / MIDI 5-pin DIN converters. Thanks to LPZW for noticing that this is possible!

To install the module for this mode:

1. Use the supplied 4-pin ribbon cable to connect **MIDIXO** to the GT1 header on your Expert Sleepers* MIDI Breakout. Note which color is connected to pin 1 on **MIDIXO** and make sure that same color is connected to pin 1 on the MIDI breakout.
2. Make sure all 3 jumpers on the printed circuit board are disconnected. You can do this by making sure each jumper is connected to only *one* of its corresponding pins. Or you can remove the jumpers completely from the board. (Don't lose the jumpers – they're smaller than the common size that you've probably got hanging around.)

To operate the module in this mode:

1. Plug a stereo audio cable into the upper jack on **MIDIXO**
2. Plug a MIDI 5-pin DIN cable into the upper jack on your Expert Sleepers* MIDI breakout.
3. Toggle the upper switch to accommodate TRS A or B, as needed.

That's it. MIDI that goes through the 5-pin DIN cable will come out of the TRS cable. Or, you can send MIDI through the TRS cable, and it will come out of the 5-pin DIN cable. The lower jacks and switches work the same way, and are totally independent of the upper half of the module, so you can convert two separate MIDI signals between TRS and 5-pin DIN at once.

FREQUENTLY ASKED QUESTIONS

Q: The Internet says that there *is* a standard for the use of TRS connectors with MIDI

A: Yes, the MIDI Manufacturers Association approved a standard in 2018. Unfortunately, we all have gear that was made before the standard, which is why the **MIDIXO** module exists. It's worth noting that the specification says that 2.5 mm connectors are preferred over 3.5 mm. It also says that standard stereo audio cables should not be used because the wires are not in twisted pairs, and are individually shielded. In practice, people use regular audio cables (as we've suggested) without problems. Keeping the length of the cables as short as possible is not a bad idea.

Q: Is there a list of which manufacturers' devices are compatible/incompatible?

A: This crowd-sourced list of which manufacturers use which standards is pretty comprehensive: https://muffwiggler.com/forum/viewtopic.php?p=2620781

Q: I followed the instructions for using the module in Mode X, but my devices still aren't talking to each other. Why no?

A: First, make sure you're using a *stereo* cable. Your regular mono patch cables won't cut it. Make sure the cable ends look like the one on the left, not the one on the right.

If that's not it, double check that *all three* of the jumpers are in place or that they're *all* removed (depending on the instructions for that mode.)

Q: I'm trying to use MIDIXO with my Expert Sleepers* module and it's not working. Where do I start troubleshooting?

A: First, make sure that *none* of the three jumpers are in place. Then, make sure the 4-pin cable is in place. If both of those check out, the next step is to take a look at the MIDI section of your Expert Sleepers* manual. Make sure that you're not expecting the module to respond to MIDI in a way that it's not designed to. Finally, try another MIDI device to see if you still have trouble. If you find that the problem is related to a particular piece of gear, it may be that it's configured wrong, that it uses strange voltages on its MIDI ports, or that it's the rare, rumored unicorn that corresponds to neither MIDI TRS A nor TRS B.

Q: What's the difference in versions of MIDIXO?

A: MIDIXO Model 92½ has a laser engraved aluminum front panel. Model 92¾ has a black & copper FR4 panel (think Make Noise). The two versions of the PCB (1.4 and 1.5) differ only in their place of manufacture: the functionality is the same.

TECHNICAL SPECIFICATIONS

MIDIXO is designed to be used in a Eurorack-compatible case. It is a passive module and does not require a Eurorack power supply or a connection to your bus board.

Width	2hp
Depth	17 mm
Current Draw	Zero

Included are two M3 x 0.5 mm stainless steel pan-head screws, three 2 mm jumpers, and one 4-pin cable (4 in. length) for connecting to a module with a compatible MIDI header.

Solder, jumpers, printed circuit board and all its attached electronic components are certified RoHS compliant. Packaging for MIDIXO Model 92¾ is made of all recycled and reclaimed materials.

LIMITED WARRANTY

From the date of manufacture this device is guaranteed for a period of 1 year against any manufacturing or material defects. Any such defects will be repaired or replaced at the discretion of XOXO Modular. This does not apply to damage caused by misuse or physical mistreatment.

No responsibility or liability is implied or accepted for harm to person or apparatus caused through operation of this product, or for any errors or inaccuracies that may appear in this document.

By using this product you agree to these terms.

SUPPORT

Any support information about this module can be found at http://xoxomodular.com Email info@xoxomodular.com with any questions, feedback, or because a 2mm jumper got lost in your high-pile carpet.

** While **MIDIXO** is compatible with the Expert Sleepers modules described above, Expert Sleepers does not manufacture or provide support for this module. Thank you to os for his consent and encouragement, and for making some amazing hardware and software.*