DETAILED SAFETY INSTRUCTIONS

1) Read these instructions.
2) Keep these instructions
3) Heed all warnings
4) Follow all instructions
5) Do not use this device near water
6) Clean only with a dry cloth
7) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10) Protect the power cord from being walked on or pinched particulary at plugs, convenience receptacles, and the point where they exit from the apparatus.
11) Only use attachments./accessories specified by the manufacturer.
12) Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13) Unplug this apparatus during lightning storms or when unused for periods of time.
14) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damages in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

INTRODUCTION

Congratulations on your purchase of the Dtronics MS-06.
The Dtronics MS-06 converts midi timing signals to adjustable DIN-sync and Jack-sync outputs.
The MS-06C also has a midi to cv/gate converter on board.
The MS-06R also has a 6.35 mm Jack with RUN signal output.
The MS-06RC has both.

Features:

- Sync to midi converter, sync24 in, midi out,sync24 out, Jacksync out 4ppqm.

- Midi to sync converter with 2 programmable clock dividers.
  Sync output for 1:1 to 1:256 of the clock input.

- Din sync output and Jack sync output can be set to different clock speeds.
  Sync output for 1:1 to 1:256 of the clock input.

- Jack sync output can be set to continuous output or only active when RUN is active.

- Led that shows the current clock speed (1/24 of clock frequency).

- Jack output with RUN signal (MS-06R / MS-06RC only)

- CV/GATE output 2x 3.5mm jack. v/oct 0 to 5 volts. (MS-06C / MS-06RC only)

- Power input: 9 to 12V DC, max 100mA. + on center pole.

	Programmable DINSync output	Programmable JACKSync output	JackSync clock continious or at RUN only	Jack output with RUN signal	CV / GATE output V/OCT	Tempo LED
MS-06	o	o	o			o
MS-06R	o	o	o	o		o
MS-06C	o	o	o		o	o
MS-06RC	o	o	o	o	o	o

Operating instructions

When you apply power to the converter the led will blink a few times.
The unit is now in SYNC to MIDI mode.

Sync2Midi - Input: sync24 , output: MIDI timing, DINsync24 and JACKsync(4ppqm).

CONNECTOR	SIGNAL
MIDI/SYNC IN	SYNC24 INPUT (24ppqm)
MIDI/SYNC OUT	SYNC24 OUT / MIDI TIMING SIGNAL OUT (24ppqm)
SYNC OUT	SYNC24 OUT (24ppqm)
JACKSYNC	SYNC OUT (4ppqm)

As soon as you connect a midi signal to the midi-input, the unit switches to MIDI to SYNC modus.

Midi2Sync - Input: midi timing, output: MIDI thru, DINsync and JACKsync.

CONNECTOR	SIGNAL
MIDI/SYNC IN	MIDI IN
MIDI/SYNC OUT	SYNC OUT / MIDI TIMING SIGNAL OUT
SYNC OUT	SYNC OUT
JACKSYNC	SYNC OUT

PROGRAMMING

The MS06 can be programmed to your needs. These settings are used for midi to sync only, sync to midi settings can not be changed.

Programming the MS-06.

- The DINSync output can be programmed from 1/1 to 1/256 of the input clock.

- The JACKSync output can be programmed from 1/1 to 1/256 of the input clock.

- The JACKSync output can be programmed to continiuosly output a clock signal or only during RUN.
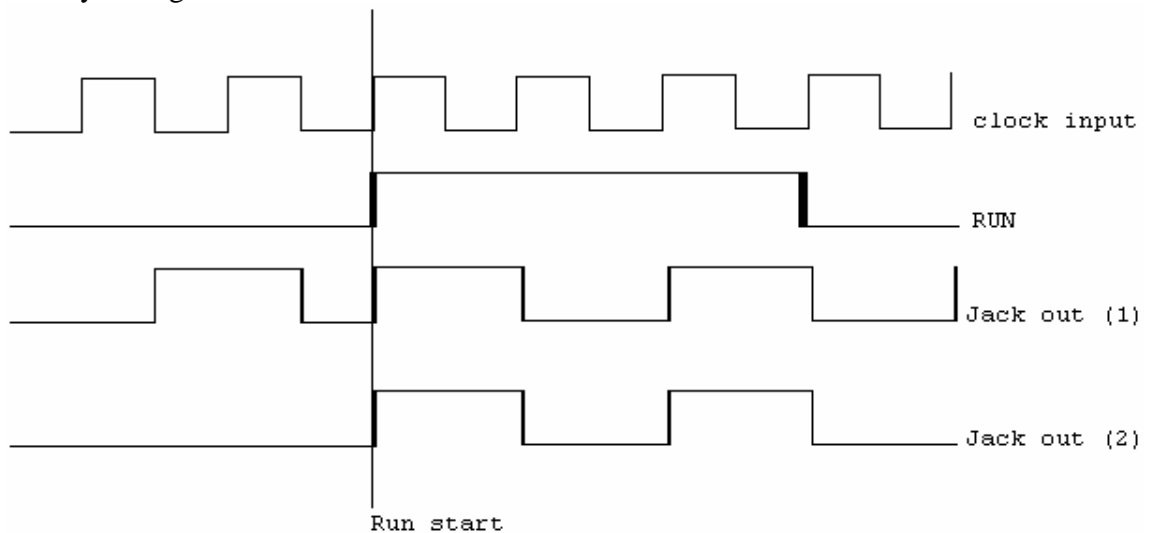
Jack out (1) shows: Jack sync always active.
Jack out (2) shows: Jack sync active during RUN.

- The Midi channel for the CV output can be set from 1 to 16 (MS-06C only)

All these settings can be programmed by midi-system exclusive. A special windows program is freely available for easy programming.

After sending the correct midi Sysex string, the LED will blink a few times and the converter will operate with the new settings. The settings are stored in memory and will be used until you reprogram them again.
If a faulty sysex stream is received, the led wil blink fast and the unit will no longer work until you turn-off and turn-on the power.

MS-06 V2 SYSEX PROGRAMMING

Data format: <start sysex> <mfg ID> <model ID> <data 1>…<data 5> <end sysex>

Example: **F0 3A 06 d1 d2 d3 d4 d5 F7**

d1 -   Sync24 output setting.
          The sync output can be set in 256 steps. From 24ppm to 24/256ppm.
          0x01 – 24ppm
          0x02 – 12 ppm   (24/2)
          0x03 – 8ppm   (24/3)
          0x04 – 6 ppm
          0x06 – 4ppm   (24/6)
          0x08 – 3 ppm
          0x0B – 2 ppm   (24/12)
          0x18 – 1 ppm   (24/24)
          0xf0 – 1/100 ppm   (24/240… YES THAT IS SUPER SLOW!!)

d2 -   Jacksync output setting
          The sync output can be set in 256 steps. From 24ppm to 24/256ppm.

          0x01 – 24ppm   (24/2)
          0x02 – 12 ppm   (24/3)
          0x03 – 8ppm
          0x04 – 6 ppm
          0x06 – 4ppm   (24/6)
          0x08 – 3 ppm
          0x0B – 2 ppm   (24/12)
          0x18 – 1 ppm   (24/24)
          0xf0 – 1/100 ppm   (24/240… YES THAT IS SUPER SLOW!!)

d3 -   Jacksync mode
          00 – clock always running
          01 – clock only running between START and STOP

d4 –   Midi channel for CV output 0x00 to 0x0f (MS-06C only)

d5 –   reserved (00)

Example: 12ppm on din, 4ppm on jack and clock only running between START and STOP.
Sysex data: **F0 3A 06 02 06 01 00 00 F7**

Factory reset:

When the unit is not working properly or if you want to bring it back to the factory settings, you can sent a
factory reset command.
Sysex data: **F0 3A 06 FF F7**

This will reset the unit to:
Dinsync on 24ppm,
Jacksync on 4ppm
Jacksync clock only running between START and STOP

When a faulty sysex stream is received, the led wil blink fast and the unit will no longer work until you
turn-off and turn-on the power.

END USER WARRANTY

Trademarks
Dtronics and Retrotronics are trademarks of Engineers@work. Windows is a trademark of Microsoft Corporation.
Other product and brand names are trademarks or registered trademarks of their respective companies.

End User Warranty
Engineers@work. warrants this product, under normal use, to be free of defects in materials and workmanship for a
period of One(1) year from date of purchase, so long as: the product is owned by the original purchaser, with proof of
purchase from an authorized Dtronics dealer. This warranty explicitly excludes power supplies and included cables which
may become defective as a result of normal wear and tear.
In the event that Dtronics receives, from an original purchaser and within the warranty coverage period, written notice of
defects in materials or workmanship, Dtronics will either replace the product, repair the product, or refund the purchase at its option.
To obtain warranty service, the original purchaser or his authorized dealer must fill the support contact form at
http://www. dtronics.net. In the event repair is required, shipment to and from Dtronics and possible handling charges shall be borne
by the purchaser. Dtronics will not accept returns without prepaid shipments. In the event that repair is required, a Return
Authorization number must be obtained from Dtronics. After this number is obtained, the unit should be shipped back to Dtronics in a
protective package with a description of the problem and the Return Authorization clearly written on the package. All such returns
must be shipped to Engineers@work. headquarters in Haarlem, Netherlands.
In the event that Dtronics determines that the product requires repair because of user misuse or regular wear, it will assess a fair repair
or replacement fee. The customer will have the option to pay this fee and have the unit repaired and returned, or not pay this fee and
have the unit returned and un-repaired.
The remedy for breach of this warranty shall not include any other damages. Dtronics will not be liable for consequential,
special, indirect, or similar damages or claims including loss of profit or any other commercial damage, even if its agents
have been advised of the possibility of such damages, and in no event will Dtronics's liability for any damages to the
purchaser or any other person exceed the price paid for the product., regardless of any form of the claim. Dtronics
specifically disclaims all other warranties, expressed or implied. Specifically, Dtronics makes no warranty that the product is fit for
any particular purpose.

The FCC and CE Regulation Warning
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions : (1) this device
may not cause harmful interference, and (2) this device must accept any interference received, including interference
Dtronics MS06
that may cause undesired operation. Caution : Any changes or modifications in construction of this device with are not
expressly approved by the party responsible for compliance, could void the user's authority to operate equipment.
NOTE : This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part
15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the
equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency
energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio
communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case
the user will be required to correct the interference at his own expense. If necessary, consult an experienced
radio/television technician for additional suggestions.

Correspondence
For technical support inquiries, contact your nearest dealer or Engineers@work directly at:

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The Netherlands

www.engineersatwork.nl
Technical Support on web: http://www.dtronics.net