Clock Transposer
Installation Guide

North American Office:
5600 General Washington Drive
Suite B211, Alexandria, VA 22312
USA
Toll Free: (800) 272-4775
T: (703) 933-0024
F: (703) 933-0025

European Office:
Twickenham Avenue
Brandon, Suffolk
IP27 0PD
United Kingdom
T: +44 (0)1842 814814
F: +44 (0)1842 813802

www.ssosystems.com

The console clock combines three functions into one compact unit. As a standalone clock and stopwatch it can be mounted anywhere and requires 9V DC to operate but will retain the correct time when the power is off. We supply an AC power unit to power the system.

A third function is provided to operate as a transposer. In this mode an additional board provides 16 pins to simulate a rotary switch and an input pin that may be wired to General Cancel.

The Component parts

The Display

The display is designed to match the range of SSOS control metalwork and is the same 2 1/4″ (58mm) square as a four button panel or the rotary transposer switch panel. Because of the compact design it is necessary to split the electronics. To assemble the panel in the console the cables are unplugged and reconnected when the panel has been fitted to the console.

The Control cards

We have shipped the clock as separate cards so they can be arranged to suit the space available.

Above on the left is the clock processor board and on the right the clock counter which contains the battery to run the clock.

To ensure the correct voltage is supplied to the clock we also include a power supply which will need to be connected to an AC source.

The Transposer driver

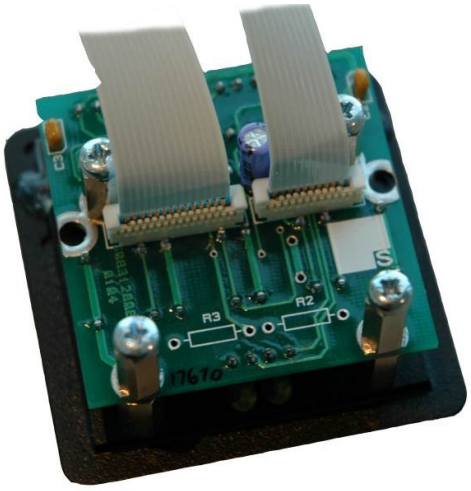
There are two additional boards to control the transposer. A driver board shown on the left above and a relay which is used to invert the signal from the general cancel feed.

The optional transposer driver card is a standard MultiSystem positive output module and connects to the control box. This module provides 16 outputs from -8 to +8 semitones controlled by the display.

Installation

First attach the display to the console. The cutout needs to be between 48 and 54mm. The display mounts with the buttons in the lower section. See the picture at the front of this manual to see the display in action. If the display has the flat cables attached you will probably need to remove them before attaching the display to the console. If it is difficult to attach the cables with the display in place try passing the cables through the hole and attaching them from the front before fitting the display (see attaching flat cables, below for instructions)

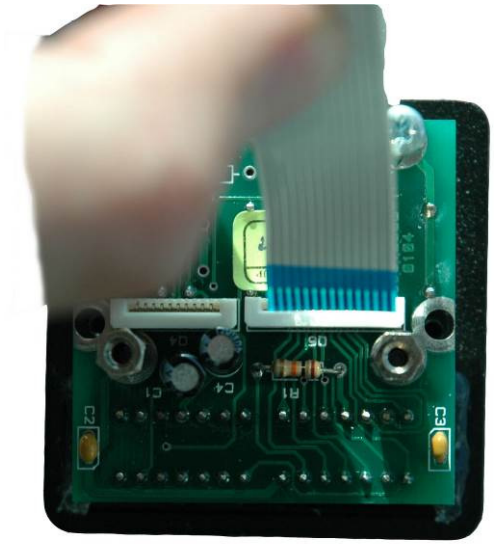
The bracket supplied can be used to clamp the display in place. The screws are M3 if you need to lengthen them.



Attaching flat cables

There are two cables that connect the display to the control box. They are different sizes so it is easy to tell which is which. However it is easy to put them in backwards which will not damage the unit but it will stop it working.

The picture below shows the blue face of the cable against the white clip of the connector. This is the correct way to insert the cable. The blue face may also be another colour, it is the side that does not have the metal connections on.



Cable connectors

The two small white connectors on the rear of the display have clips that slide out to release the cables and after the cables are inserted they must be pushed in to hold the cable in place.

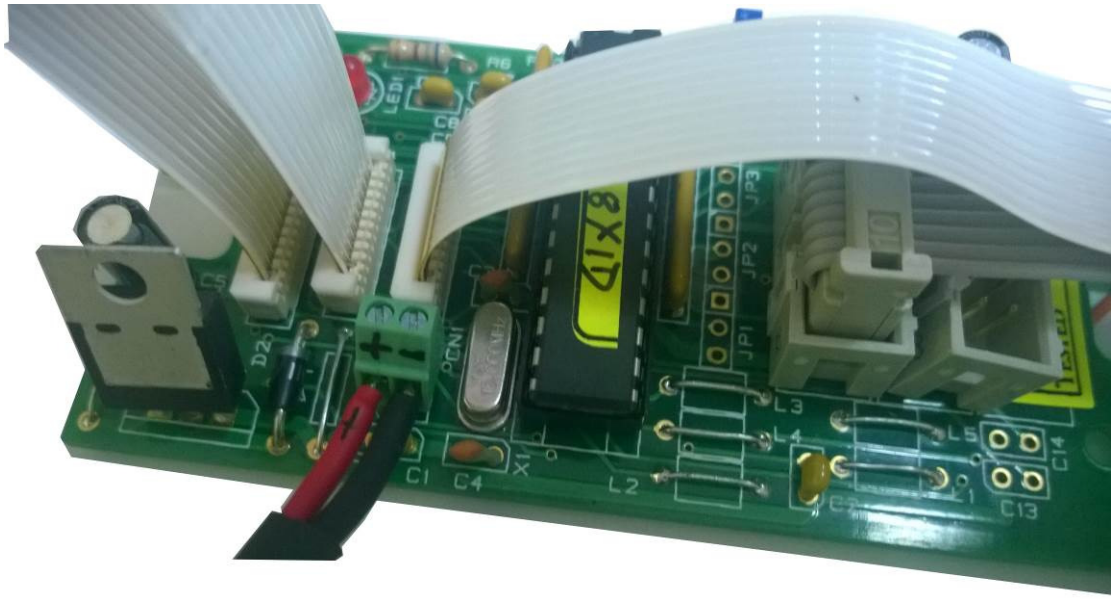
To release: Grasp the top of the connector with your finger nails or a small screwdriver and pull the top of the connector gently about 2mm away from the circuit board.

To Close: Push the top of the connector towards the circuit board until there is no gap with the other section of the connector.

Attaching the Control Cards

Power

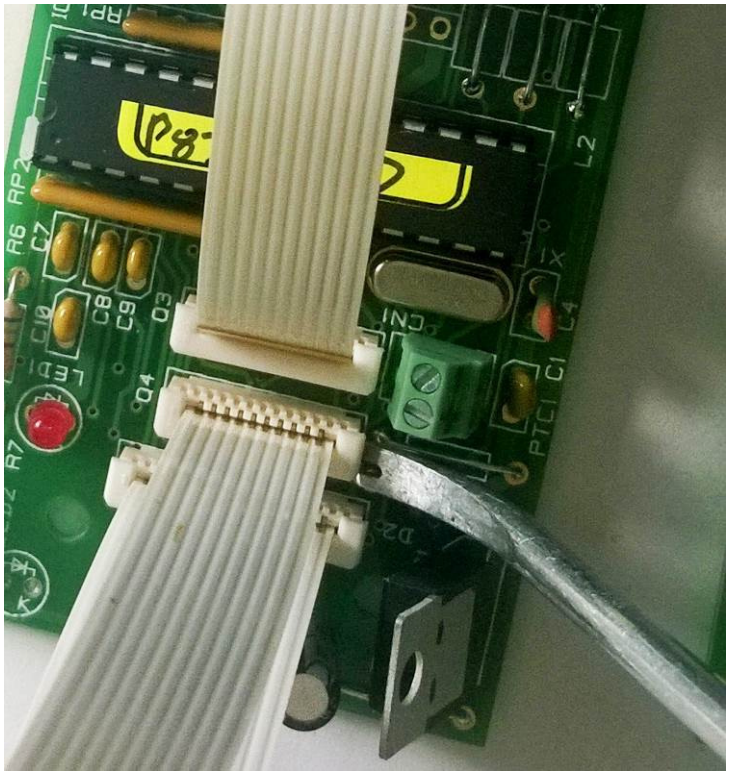
The control box requires 9V DC connected to the screw terminals inside. The Positive terminal is marked RED and the Negative terminal is marked BLACK or WHITE. The current requirement is less than 0.5A. We supply a power supply for this purpose as often the organ power is a higher voltage. The power supply can switch off with the organ. The clock display is only lit when the power is on but it will still keep time.



Clock Battery

The clock requires a battery to keep time when the power is off. The clock may be shipped with the battery removed and it needs to be placed in the holder after all the wires are connected. The battery slides into the receptacle and under the metal clip. Spare batteries can be easily obtained in a local store they are Lithium CR1616 3Volt.

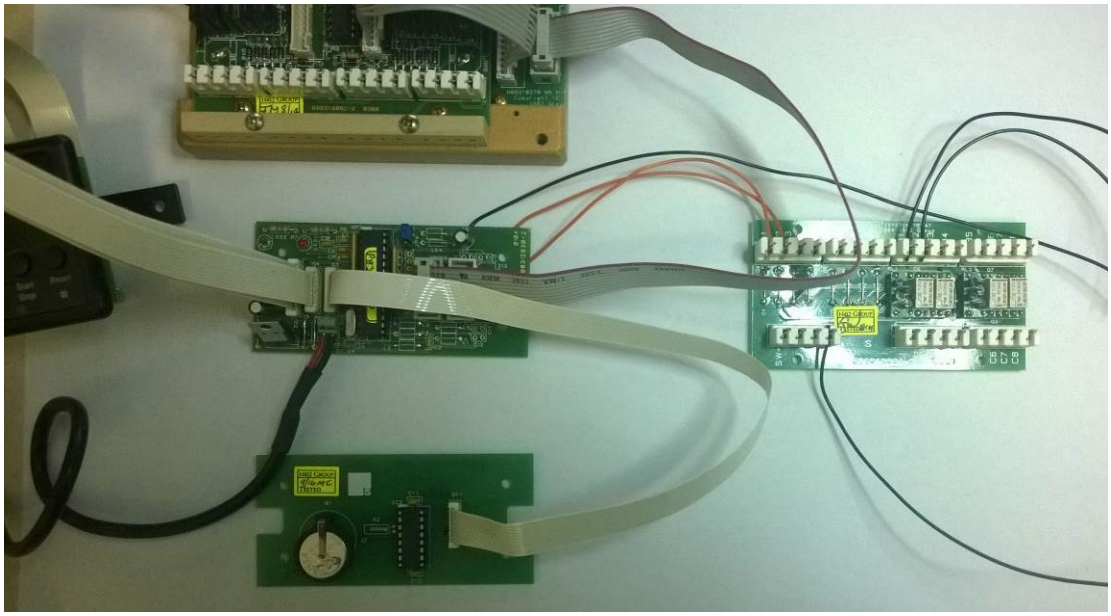
Connecting the clock to the processor



The cable from the clock card plugs into the small socket nearest the chip with the yellow label as shown above. In the same way as the display take care to get the cable the correct way round, the coloured back goes away from the chip with the yellow label.

The connector has a retaining bar that must be up way from the board to allow the cable to be inserted. The picture shows a small screwdriver being used to gently lift the b so the cable slips in with no resistance. The screwdriver can also be sued to gently push the bar back down to lock the cable. Make sure you do this or the clock will not function.

Transposer



The picture above shows all the boards laid out on the bench to provide an overview of the system.

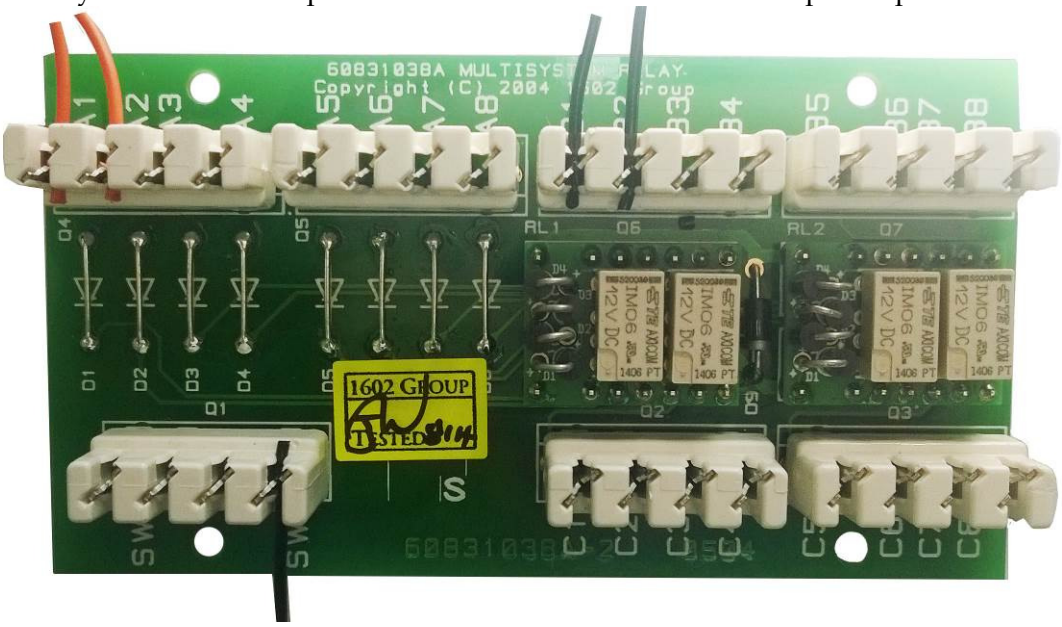
The control box needs to drive the 16 positive outputs for the transposer and it does this using a standard MultiSystem Positive Output module as shown in top of the picture above.

The 10 Way ribbon cable plugs into a connector called. The module also requires console power connected to the black and red cables supplied.

There is a black wire attached to the processor board that must be linked to console negative.

General Cancel

1. Take a feed from the general cancel piston or the pinboard where it is wired to and link it to the relay card pin marked SW+. This will close the relay when the piston is pressed.
2. Wire SW – to console negative
3. Wire pins B1 and B2 to console negative.
4. Wire pins A1 and A2 to the two orange wires connected to the processor board. They can be in either pin but each must be connected to a separate pin.



Output connection

The 16 way output module outputs a positive signal on the pin selected by the transposer control. If the transposer is not set then no pins will be on. Pin 1 of the board is the top pin when the Krone connector is to the left of the cable register in the same way as a MultiSystem.

Transposer Pin	Function
1	Down 8 Semitones
2	Down 7 Semitones
3	Down 6 Semitones
4	Down 5 Semitones
5	Down 4 Semitones
6	Down 3 Semitones
7	Down 2 Semitones
8	Down 1 Semitone
9	Up 1 Semitone
10	Up 2 Semitones
11	Up 3 Semitones
12	Up 4 Semitones
13	Up 5 Semitones
14	Up 6 Semitones
15	Up 7 Semitones
16	Up 8 Semitones

Operating Instructions

Control buttons

Disp: The On Off switch blanks the screen. In transposer mode this button is used to transpose down and is indicated by an arrow in the display when the transposer is engaged.

Select: The select switch, cycles through the optional modes of clock, stopwatch and transposer, the choices are displayed on the screen.

Start/Stop, used to start and stop the stopwatch. Push once to start and once more to stop and freeze the display in hours minutes and seconds. In clock mode pressing Start/Stop will momentarily display the current date.

Reset: Used to reset the stopwatch display. In transposer mode it is also used to transpose up and is indicated by an arrow.

Modes

Clock

In clock mode the clock displays hours and minutes only so it is not confused with the stopwatch mode which shows seconds as well. The clock can be set to show either 12 or 24 hour clock format and display date if asked.

Setting the clock

1. Press and hold the Select button for 2 seconds and release. ClkSet will display and an arrow showing more options if the right button is pushed. Select is now used to exit the setting mode if needed.

If you want to set the clock then stay on this screen and go to step 2. If you want to choose another feature to set then press the right button (Reset) and follow the instructions in item 5 below.

2. Press the Start/Stop button and the current clock time will be displayed with the first digit flashing. To change this number press Start/Stop again to scroll through the valid numbers for this digit.

3. To choose the next digit to change, press the right hand button and to choose the previous digit, choose the left. (right to go right, and left to go left)

4. If you continue to press the right button will also take you to the date setup screen…. The date must be set in the Euro standard of DD MM YY although the actual display can be changed later using the date format command.

5. Press Select to exit to the set menu where the right button can be used to choose one of the following:

Clock Set
12/24 Hour format
Lang
Date format
Exit

Clock set sets the current time and is covered in instructions 2-4 above.

12/24 Hr format sets whether the clock shows the time in 12hr or 24hr format. There is no AM/PM indicator.

Lang changes the default language of the clock between English, French and German.
Date format changes the format between DD MM YY and MM DD YY for different regions.

Again the Start Stop button selects a choice in the menu and Select is used to go back or exit.

Stopwatch

To choose the stopwatch mode use the Select button and cycle to Stopwatch. When you release the button the display will show the current stopwatch memory in hours minutes and seconds.

Press Start/Stop to start the stopwatch counting
Press Start/Stop again to stop the stopwatch counting

Press Reset to reset the display to zero

Transposer

To choose the transposer mode use the Select button and cycle until the display reads "Transpos". When you release the button the display will show the current transpose position in semitones. Arrows at the ends of the display indicate which button to press if you wish to change the transposer position.

To cancel the transposer push both buttons under the arrows at the same time.

Troubleshooting

1. The Clock does not count time
If all the other controls work but the time does not increase it is likely that the battery was added before the wiring was complete between the circuit boards. The clock counter needs to be reset. Make sure the power is off and the red LED is not lit. Remove the battery in the clock for about 1 minute and then replace it. The clock should work correctly now.

2. The display is dead and the red LED is off
With the box open check the red LED is lit, if not there may be no power reaching the clock. Check to see that there is positive DC on the connector marked RED and negative on the connector marked BLACK or WHITE.

3. The display is dead and the red LED is on
Check that the two flat cables are inserted correctly and the coloured side is on the correct side as described in the assembly instructions.