

# SOLID STATE ORGAN SYSTEMS

## **Console Clock and Digital Transposer Instruction Manual**



The console clock combines three functions into one compact unit. As a standalone clock and stopwatch it can be mounted anywhere and requires 10 – 15V DC to operate but will retain the correct time when the power is off. 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 which fits in another box. To assemble the panel in the console the cables are unplugged and reconnected when the panel has been fitted to the console.

### ***The Control box***

The control box is designed to screw to the inside of the console close to display. There are two cables linking it to the display and they are a fixed length and allow the box to be approximately 10" (254mm) from the rear of the display. The lid of the box is removable for connection and service.

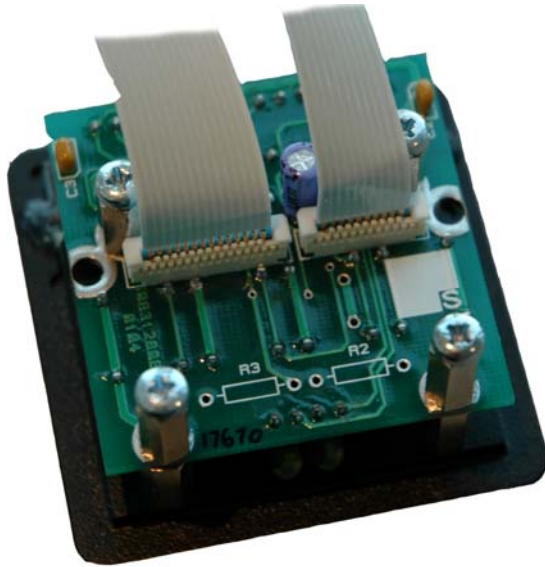
### ***The Transposer driver***

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)

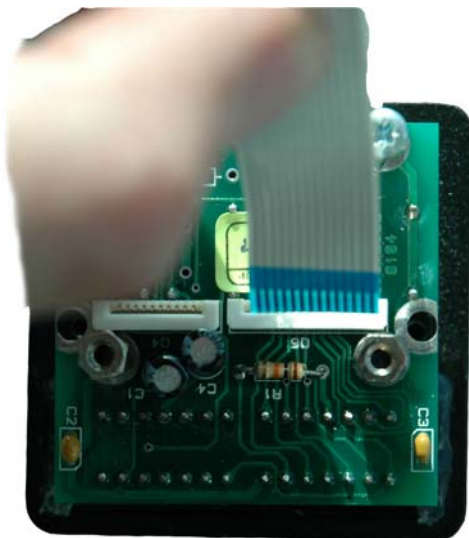
The bracket supplied can be used to clamp the display in place. The screws are M3 if you need to lengthen them.



### 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.

Inside the control box are two leds, the red one is for power but the yellow one is to test that the display is connected correctly. If you press the on/off button the yellow led will light if the cables are connected correctly and the power is 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 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 Box.

The control box opens into two parts. The clock module is fitted inside the lid, which is the larger part. The main controller is in the smaller part which screws to the console through the two holes provided.



## Cables

All the cables must be arranged to exit through the end of the box nearest the led indicators and through the slot so they are not trapped when the lid is closed.

## Power

The control box requires 10-15V DC connected to the screw terminals inside. The Positive terminal is marked PINK and the Negative terminal is marked BLUE. The current requirement is less than 0.5A. If you wish the clock to display when the organ power is off then use a small 9V DC power supply.

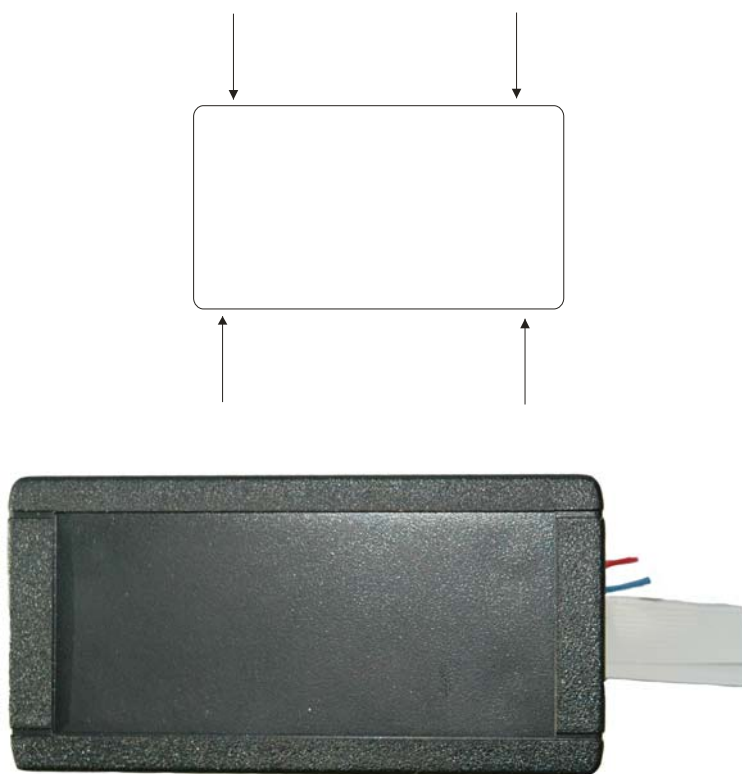
## Clock Battery

The clock requires a battery to keep time when the power is off. The clock is 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.

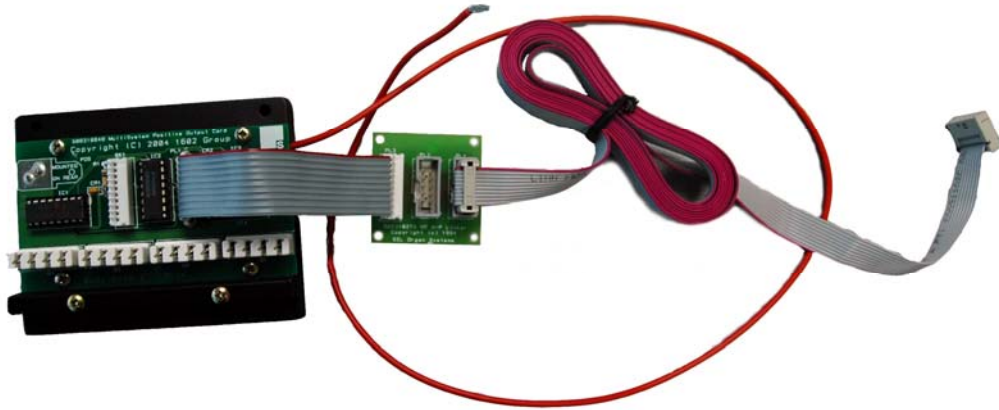
## Closing and opening the box.

To close the box, first make sure all the cables are aligned with the slot and the lid is turned so that the slot in the end of the lid is in line with the cables. Then push into place so that the clips hold the lid on.

To remove the lid is a little more difficult. This can be done by squeezing the lid and pulling it off. If this is not successful the clips need to be released with a small screwdriver pushed into the gap between the lid and the base as shown below.



## Transposer.



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 above.

The 10 Way ribbon cable plugs into a connector called XPOSE and the cable exits the box with the clock cables. The module also requires console positive power connected to the red cable supplied.

### **General Cancel**

We have provided an option to wire the transposer to General Cancel. The input to the module requires two negative inputs to be fed via diodes to pin 7 and 10 of Q1. We have provided a cable and an inverter to feed this from a positive general cancel piston. The inverter also needs DC power to operate.

### *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.

<b>Transposer Pin</b>	<b>Function</b>
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 PINK and negative on the connector marked BLUE.

### **3. The display is dead and the red LED is on**

The "Disp" button is used to blank the screen but it also has an internal diagnostic that lights a yellow LED inside the box when pressed. If the yellow LED does not light but the red one is lit then check that the two flat cables are inserted correctly and the blue side is on the correct side as described in the assembly instructions.