

# How to use the master clock impulse unit SR250 8FS-50 and SR250 8FS-60

## Introduction

Thank you for buying this product. To avoid disappointment or damage please read these instructions carefully.  
*They are important!*

- Semiconductors are highly vulnerable to static electricity. When touching the printed circuit board or connectors wear cotton (not woollen) clothing and always touch something earthed such as a metal tap, water or gas pipe immediately before handling the unit.
- Power must never be connected when installing, connecting or making a change to the unit. Reconnect the power afterwards.
- The SR250 8FS-50 is running on its own oscillator, but synchronizes to 50Hz (cycles) mains frequency.
- The SR250 8FS-60 is running on its own oscillator, but synchronizes to 60Hz (cycles) mains frequency.
- A short cut of the mains, <3 seconds (unloaded), does not affect its running.

## Altering optional settings

Switch unit SW1 has four subminiature DIP switches S1-S4, each of which can be set to 'on' or 'off'. These allow you to select the following settings (the unit must be resetted after alteration to S1). S4 is not connected.

### Minute pulse (60 per hour)

S1: off

S2: off

S3: off—single pulse, 0.6 second long, interval during corrections time slave dial 0,2 second.

S3: on—single pulse, 2 seconds long, interval during corrections time slave dial 1 second.

### Half-minute pulse (120 per hour)

S1: off

S2: on

S3: off—single pulse 0.6 second long, interval during corrections time slave dial 0,2 second.

S3: on—single pulse 2 seconds long, interval during corrections time slave dial 1 second.

### Seconds pulse (60 per minute)

S1: on single pulse, 0.6 second long

S2: no function

S3: no function

## Operation of push button SW2

When the power supply is connected to the SR250, the LED blinks very fast (100/120 times a second). It signs the zero-detection.

Pushing button SW2 once will cause the time to run fast (LED on); it will stop if SW2 is pushed a second time. This sequence can be repeated. After the slave clock has been stopped the internal timer of the SR250 starts running and gives, depending the setting of SW1, after one minute, 30 seconds or one second an impulse.

## Power supply

Only with a ~AC power supply! With our mains power supply (T1), only for 230V-240V/50Hz mains voltage!, the outgoing wires are connected to the right terminal (connection 9 and 10), viewed on top with the pushbutton on the right side of the printed circuit board.

*Important note if you are supplying another transformer*

After rectification the voltage must be no more than 34V maximum (higher voltages will damage the SR250) and no less than 22.5V under load. A small transformer rated, for example, at 24V/100mA gives a significantly higher voltage than indicated when not fully loaded. The rectified voltage can easily exceed 34V!

## Slave clock dials

Single and dual polarity slave dials are connected to the left terminal (connection 3 and 4).

The first pulse from the SR250 produces a positive voltage on terminal 3 and a zero voltage on terminal 4.

When 24V slave dials are used, the jumper JP1 must be slid over both pins. With 12V slaves the jumper should be slid over just one pin.

For slaves with a coil voltage below 12V a series resistor is necessary.

Example: Brillié: coil 10 ohms / 1.5 V makes:  $1.5V$  divided by 10 ohms = 150mA.

The formula:  $13V$  (SR250)  $-$  1,5V (Brillié) = 10.5 : 0.150 (Brillié mA) makes 77 ohms (*use an 82 or 100-ohm resistor*). The surplus in ohms is to limit the current and to avoid blowing the fuse on the SR250 by drawing too much current.

The maximum current for one or more slaves is 450mA.

After connecting the transformer and the slave clock, cheque if the first impulse from the SR250 has the correct polarity for the slave. Set the minute or second hand on an even minute. Switch on the power. Depending the setting of SW1 the minute or second hand must go forwards one step after one minute, 30 seconds or one second. Is this time doubled, the wires in the left terminal must be exchanged.

## Opening the case, if applied to

The case is opened by gently squeezing in the 4 slots (and lifting the cover at the same place) in sequence clockwise.