FTC 3724

Flight Time Counter

FTC

Installation and Operating Handbook

Originaly until 2022:	**From 2023 on:**
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1. Operation

 *Figure 1 : Front view of the device*	Hours and minutes or hours and hundredths of an hour are shown on LCD-display. When the counter is active, double-dots blink. Double-dots are permanently on when counting is not-active.

An integrated capacitor (SuperCap®) keeps the display on for a few minutes after the power supply is removed.

There are two display modes: hour-minute and hour and hundredths of an hour.
On power-up, the software version and display mode are displayed temporarily. '59' indicates that the hour-minute display is in use and '99' indicates the hour and hundredths of an hour display.

Remarks:
Please note that when the display mode in hundredths of an hour is selected, the 'MIN' inscription at the top of the LCD may lead to confusion!

After a long power-off time, the LCD becomes readable only once the SuperCap is charged. (typical delay of 15 sec after power-supply is applied).

ERROR message:
An error message appears when one or several (depending on the software version) checksum errors occur due to electrical interference. This error can be cleared by pressing the UP key during startup.

Software version	Error appears when…
1.x	One checksum error occurs.
2.0	More than 100 checksum errors occur.
2.1	

Table 1: Error condition depending on software version.

2. Installation

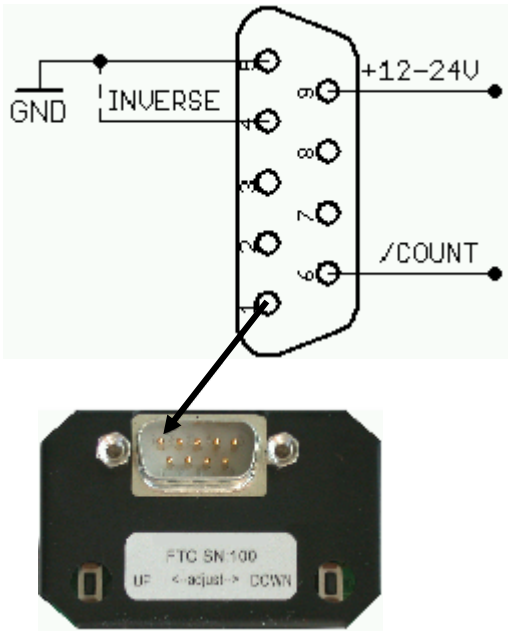

Figure 2 : SUBD9M connector

PIN	DESCRIPTION
4	Inverse
5	GND
6	Count
9	12 to 24 DC power supply

The counter is active when the "COUNT" input is at ground level and the "INVERSE" input (pin 4) is not connected.

If pin 4 is connected to GND (pin 5), the counter becomes active when the "COUNT" input is either open or greater than 5V. The pin 4 enables to inverse the ‘COUNT’ input behavior.

Activity is indicated by two blinking dots.

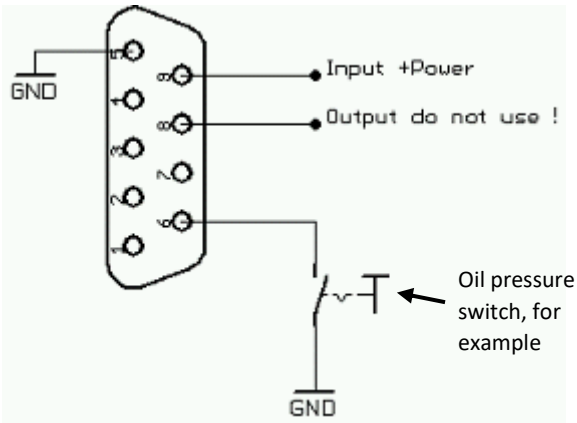

Figure 3 : Example of setup

2.1 Configuring the display mode

The configuration is made using two push buttons on the back of the device. Use a pointed tool, such as a ball pen, to be able to press them.

To get the time displayed in hours/minutes, simply perform a general reset by pressing both pushbuttons simultaneously for at least one second.

To get the time displayed in hours and hundredths of an hour, press the two pushbuttons when the device is switched on.

2.2 Configuring the Starting Time

Connect the FTC with power. Any 9 V battery can be used too.

The switch on the right decreases the time and the left one increases it.

A short press adjusts the values in small steps, while a long press increases or decreases them more quickly.

Figure 4 : Configuration of the starting time.

3. Mechanical dimensions

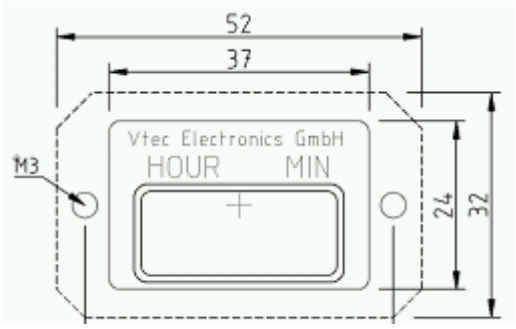

Figure 5 : Dimensions in mm

4. Specifications

Power supply	8 – 26 V
Current consumption	3 mA, up to 10 mA during SuperCap charge
Operating temperature	-10 to +70 °C , non-condensing
Weight	30 gr *(screws, connector, wiring not included)*
Accuracy	<1%, typical error < 0.1 % (less than 3s / hr)

5. Versions

Hardware	Software	Changes (non-exhaustive list)	S/N
1	**1.0**	First version	1 – 150
1.3	**1.1**	Input for inverse function	151 – 211
1.4b_R1	**1.x**	Memory backup improved. New PCB	212 - 290
1.4b_R1	**2.0**	Memory error detection & correction. Setup improved	291 - 330
1.4b_R1	**2.1**	Memory bug fix. Hundredth of an hour display.	From 331