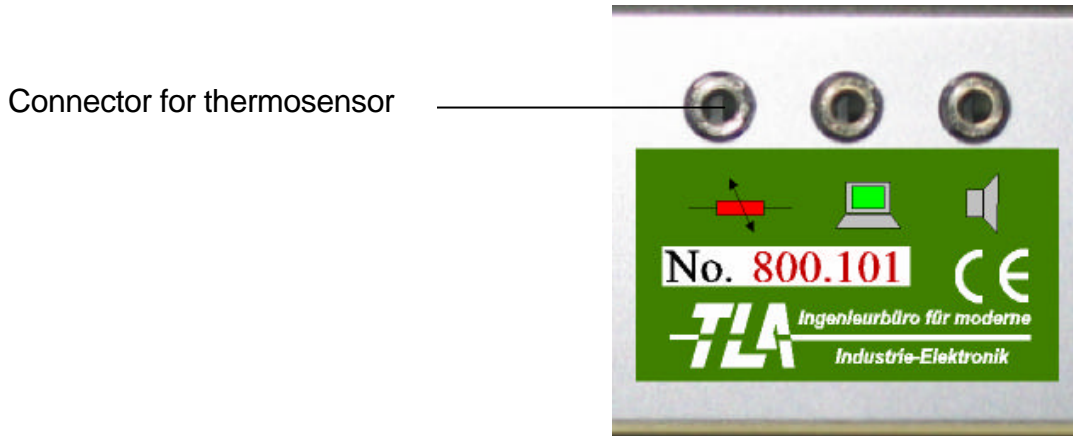


Thermosensor for TUNING-SET CTS-7-PE

The mode of operation of thermosensor rate and thermosensor reference are discribed in the manual of CTS-7.

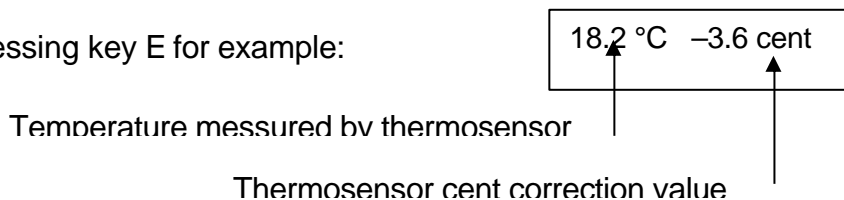


Working with the Thermosensor

As soon as a Thermosensor rate is less than zero in a intrument programm, the Thermosensor starts influencing the target frequency setting of the CTS-7-PE. The cent deviation caused by the Thermosensor and the temperature (degrees in Celsius) are now displayed automatically before entering the instrument program. The following indicator appears in the display of the CTS-7-PE:

Thermo Cents !!! go ahead with key E ! (moving display)

After pressing key E for example:



By pressing key "E", you enter the actual instrument program. The actual cent setting in the instrument program is not influenced by the cent adjustment of the thermosensor. For the creation of the target frequency, both values (thermosensor- and actual cent adjustment) are added up. In the tuning program, the sensor is reanalyzed. The evaluation also occurs during the recording of a tone at least once per minute

Operation range of the thermosensor: 0°C to 50°C

Quick instructions for thermosensor CTS-7-PE

Important: At all adjustments at the tuning device which concern the thermosensor it must be plugged in. If the therosensor is missing, these options are skipped automatically.

1. Test the thermosensor

First the correct function of the sensor should be tested. To this you are looking for the following adjustment with the menu control (see chapter 3.0 in the operating instructions):

```
THERMOSENSOR
korr. 0.0 17.4°C
```

With a thermometer you check whether the correct temperature is measured. If the right value does not match with the actual room temperature, you enter an correction value with the button pair "Func" so that the correct room temperature is displayed on the on the right.

```
THERMOSENSOR
korr. 1.0 18.4°C
```

When leaving the menu, the correction value is then stored firmly in the tuning device.

To be able to use the thermosensor, a instrument program must be entered now. In this instrument program all adjustments will be stored for your application and can be reproduced again quickly.

2. How to enter the instrument program

In order to produce the instrument program, with the menu control find this indicaton on the display :

```
ENTER INST. 209
INSTRUMENT__09
```

Using the "Func" keys, find, for example, memory number 14 (the last two digits of the menu indication correspond to the memory number). You can access memory number 9 thru 60..

```
ENTER INST. 214
INSTRUMENT__14
```

Now, press the "E" key. On the bottom line of the display a moving line appears: "Go ahead with "S+F" !". To go ahead, keep "S" pressed and tap "F" (for memory protection). This indicator appears on the display:

```
*
INSTRUMENT__14
```

You now may assign an easily remembered name to the memory.

In the "Menu Control Overview " delivered with the set you will find a quick reference how to enter a name(lower right hand side).

In this example we want to change "INSTRUMENT 14" to "PIANO_____14".

Tap the "Func >" key several times, until this indicator appears:

```
*
TIASTRUMENT__14
```

Press the "Note >" key once. After that, tap the "Func >" key several times, until this indicator appears on the display:

```
*
THASTRUMENT__14
```

Press the "Note >" key once. After that, tap the "Func >" key several times, until this indicator appears on the display:

```
*
THESTRUMENT__14
```

Repeat the above steps as long as you receive the following indication:

```
*
THERMOMENT__14
```

Press "Note >" once. After that, keep the "S" key pressed and tap the "Note >" key several times, until this indicator appears on the display:

```
*
THERMO_____14
```

Confirm the operation by pressing key "E".

You will see this indicator. Here you can enter a concert pitch you want to start your application. In this example we leave 440 Hz.

```
_a_1          P14
440.00←
```

Press the "E" key. The standard pitch will be stored to the instrument program, the Tuning Set enters the input mode. Here you can assign a cent value and a partial to every tone. In this example we skip this option and press the button "E" second times.

```
_a_1    0.0←  S14
          1    ---
```

```
store with      E
back with < >
```

At this point, setting the option "Hist.Temperament" to "on", will allow you to select an historical temperament before entering the tuning mode (not otherwise). Press the "E" key

```
Hist.Temperament
off
```

Now you enter the real parameters of the thermosensor:

Using the "func" keys, enter the room temperature offset at which you expect the tuning of your music instrument. The concert pitch (440 Hz in this example), you entered for this instrument program, is assigned to this room temperature offset. Simple description: If the room temperature reaches the value entered here (20°C in this example), the cent correction value of the sensor becomes zero.

```
th.sensor offset
20.0 deg.centi
```

Press key "E" again. Using the "func" keys, enter the cent rate value, corresponding to the pitch difference of your music instrument when the room temperature rises by 1 degree centigrade. For example 3.2 cent for air-pipes

```
th.sensor rate
3.2 cent/celsi
```

To confirm press key "E".

Your instrument program will now be stored.

```
ENTER INST.    214
THERMO_____14
```

3. How to call your instrument program

In order to use the instrument program with the thermosensor, with the menu control find this indicator on the display.

```
TUNE          214
THERMO_____14
```

Press key "E".

If you have entered a cent-rate not equal to zero in your instrument program, you receive now a walking indication "Thermo Cents !!! go ahead with key S + F"

Press key "E" again. You receive this indication. On the left side the actual room temperature and on the right side the cent correction value of the sensor will be indicated.

```
19.0°C -3.2 cent
```

Press key "E" again. The device is now in the tune-mode. Remark: The cents which are indicated here does not relate to the thermosensor. They will be added to this. Approx. every 30 seconds the thermo cents will be updated by the sensor.

```
_a_1    0.0    T14
440.00? 1    ---
```