

Abbreviations for Temperatures

Tobj: Object temperature, means temperature on the surface of the body to be measured.

Tint: Internal temperature, means the temperature within the sensor head.

Thead: Head temperature, means the internal temperature of the sensor head if the sensor is designed of two parts (box + head).

Tbox: Box temperature, means the internal temperature of the sensor box if the sensor is designed of two parts (box + head).

T1C: One color temperature

T2C: Two color temperature

Properties Record List, Main Settings

Title: This field will allow the user to define a name which will appear as the title in the resizable view or on top of the table in the fixed view.

Source Selection: You might have connected several loops to your computer or there are several logical sub-loops present within your main loop. If so, this field allows you to choose the loop which contains the sensors of interest.

Time Interval: The time interval will define how often delivered values will be recorded and put on the list at the same time. Of course the actual time interval depends also on the number of sensors connected to your loop. The higher the number of connected and therefore polled devices the longer the actual time interval will be. The input of the interval 00:00:00 will always force the software to record the data as fast as possible.

Status panel: Once this field is checked the panel containing buttons for Start / Stop of recording and redraw operations will be shown and activated. The redraw button will force the program to redraw the content of the screen.

Alarm: If this field will be activated, the color of the corresponding box will change during alarm condition.

Append to File: Once activated, the software will append new data always to the file which has been defined as the actual record file.

Create a new File every Day: If this box will be checked, the software will create a new record file every proceeding day. The file name will automatically be updated by appending the actual date to the file name.

File Name: Data will be saved onto the hard drive in standard ASCII – format (*.txt). The data can therefore easily be imported into known spreadsheet applications. The field will accept a file name used to save those data. It might further be necessary to search the hard drive for a suitable location of the file to be saved, this can be done by pushing the [Search] button.

Data Separator in Text File: Depending on the spreadsheet application you may want to use, the application might call for a certain data separator in order to keep track of the single columns to be imported. DataTempa will leave you the choice of a tab (standard), space or semicolon.

Properties Record List, Device Selection

Every single sensor available will be listed and can be activated in order to be displayed in the list. At least one device must be chosen i.e. the list must contain at least one entry.

There are several temperature boxes to choose from. The user may keep in mind, that some device classes will support all of these temperatures but others not.

A description of the abbreviations used for the different temperature signals is given here.

System Setup, Setup Connection

COM-Setup:

COM-Number: Here the user can read the COM – port number the loop is connected to. No changes can be made at this point.

Loop Name: The user may name the connected loop or process for his own convenience. This distinguishable name will later be shown in all other source selection dialogs.

General Alarm Colors: Generally the user may choose every possible color from the palette. This can be done by just clicking the color button. Among other colors for other objects it is recommended to pick the most bright colors to underline the alarm condition that might have occurred.

Devices: This table lists all during configuration detected and available sensors. The software will automatically name the sensors consecutively numbered with preceding standard names. Further, the software will automatically add alarm and pre – alarm thresholds which will correspond to the min. / max. temperature ranges of the single sensors.

The user may pick a sensor of interest utilizing the mouse and make changes to the attributes that needs some refinement. It might for instance be helpful to name a sensor which measures the temperature of an insulator „Insulator 1“ instead of „Sensor 1“.

System Setup, Passwords

In order to avoid unauthorized access to the program, it is possible to define passwords with different levels of access.

In case the field [Administrator] does not contain a previously defined password, the program is not protected in any kind. This is the default setting.

Once a password has been entered into the field, all important features of the program will be protected. Generally, three different operator profiles can be generated. This is done by

entering a password for each operator ([Operator 1] to [Operator 3]). The check boxes underneath each input field will allow the definition of the different access levels.

The following paragraph will list and describe the access levels to choose from:

View Changes

- Properties of the views
- Fix Views
- Arrange windows (Menu Windows)

Configurations

- Load, Save and Delete configurations
- Delete configuration files

Sensor Setups

- Changing sensor setup

Close Program

- close the program

Data Polling

- change poll data (Menu Setup, Poll Data)

System Setup

- Changing system setup

Once a password has been defined, only the operator with the highest ranked access level (Administrator) will be able to open the password-page which is accessible via the systems setup dialog.

Password Hold Time: Once the password protection feature has been activated, every single attempt to open one of the protected program features listed above will automatically launch the password request window. In those instances the operator has to rearrange more than one feature in a row, it might be very annoying to retype the password over and over again. Therefore, the password will be valid according to a time frame that can be defined with help of the field [Password Hold Time].

Miloš Klíma

Od: "Jan Schäfer" <xjsch@centrum.cz>
Komu: <klima@sci.muni.cz>
Odesláno: 6. května 2005 10:36
Připojit: amtir.TIF
Předmět: Re: diplomka

Ahoj Milosi,

v příloze najdes měření z FTIRu na AMTIRovém sklicku, které jsem používal ve svých pokusech.

Zpracováním tohoto spektra (po vystředování přes Planckův vyzařovací profil při teplotě 25 °C) vychází hodnota transmisivity 0,650. Transmisivita zadána pyrometru reprezentuje celkovou propustnost prostředí mezi detektorem a měřeným tělesem, tj. součin transmisivit všech vrstev, které mají nějakou absorpci resp. emisi v IR oblasti pyrometru. V některých případech se asi vyplatí ještě uvažovat vliv plazmatu, pak je: $T_{\text{total}} = T_{\text{plasma}} * T_{\text{AMTIR}}$. V běžných podmínkách kapacitního RF vyboje je ale stále $T_{\text{total}} = T_{\text{AMTIR}}$. T_{total} lze rovněž určit kalibračním postupem, jež je v nabídce softwaru (je nutné přesně znát teplotu a emisivitu měřeného kalibračního povrchu). Tímto postupem jsem v diplomce určil transmisivitu na 0,65. Transmisivita vakua resp. plynného prostředí bez sklicka je prakticky 1. Pro použití stejných hodnot stačí tedy pouze proverit, jestli není AMTIR nějak podeponovaný od doby, co jsem přes něj měřil já.

Preji ti hodně zdaru!

Honza

> Od: klima@sci.muni.cz

> Komu: xjsch@centrum.cz

> CC:

> Datum: 05.05.2005 16:41

> Předmět: Re: diplomka

>

> Preji ti pěkný a příjemný den,

> zprovoznil jsem pyrometr a mám na tebe následující dotaz.

> Nastavení transmisivity:

> 1. v případě, že mezi pyrometrem je ATIR okénko, pak $\text{trans.} = 0,65$?

> 2. v případě, že mezi pyrometrem není žádné jiné zářící prostředí, pak je

> $\text{trans.} = 1$?

> Dík Miloš Klíma

>

Spektrální hustota propustnosti, AMTIR

