

Instruction Manual

Service Software

testo 270_v2014

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1.0 General Information

The service software is designed for WIN 7, 32-bit systems.

The service software is available only in English language.

2.0 Installation Hints

It is not allowed to use blanks or any special characters inside the installation path.
Otherwise the service software firmware update feature will not work correctly.

Example of a correct wording of the installation path.

C:\temp\Servicesoftwaretestinstallation\270_2014\ServicesoftwareT270_2014\ServicesoftwareT270_2014.exe.

3.0 Communication

The communication between the testo 270_v2014 and the PC is done via the Universal Service-Adapter 0554 6600 and the new service-adaptor cable 0449 2750.



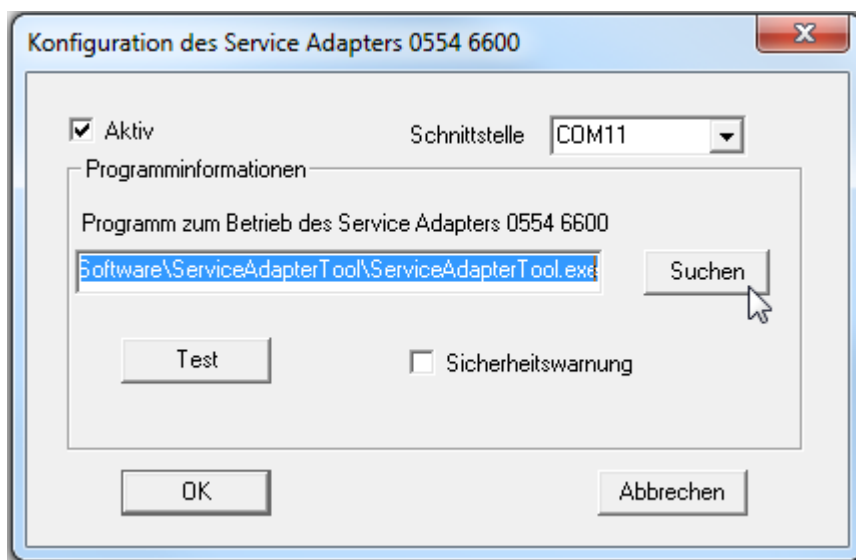
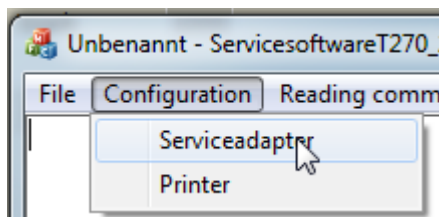
In order to do a firmware update of the probe it is required to connect the service adapter cable 0449 2750 directly at the probe socket as shown on the photograph.



4.0 Configuration service software

4.1 Control of the Universal Service-Adapter

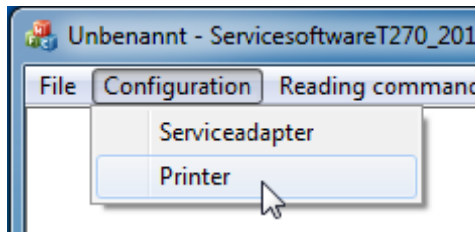
In order to establish a correct communication, the ServiceAdapterTool.exe must be installed as well. The ServiceAdapterTool.exe software must be linked in the service software test 270.



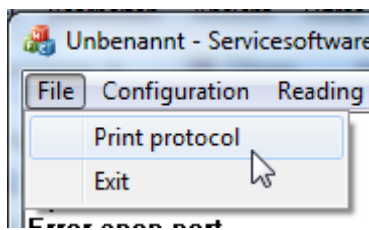
ATTENTION: A manually configuration or a fixed Service adapter setting will not lead to a communication. The communication will only function in case the Service AdapterTool.exe is embedded as shown above.

4.2 Configuration Printer / printing a calibration protocol

At first select the printer what should be used for to print out the calibration protocol.



The calibration protocol printing feature will be available after an instrument and probe is recognised by means of the reading Command identification.



The purpose of this feature is to offer a printout of the test results after exchanging a new spare probe, or after any other service works at customer services at testo AG, Lenzkirch.

Gerät/ Modultype/ Modèle/ Modelo/ Modello:			testo 270
Serien-Nr./ Serial no./ No. de série/ Número de serie/ Numero di serie:			20395403
Serien-Nr. Fühler/ Serial no. probe/ No. de série sonde/ / Número de serie sonda/ Numero di serie sonda:			20395014
Meßwerte/ Measured values/ Valeurs mesurées/ Valores medidos/ Valori misurati:			
Sollwert Reference Référence Referencia Riferimento:	Zulässige Toleranz Permissible tolerance Tolérance admise Tolerancia permitida Tolleranza ammessa:	Istwert Actual Value Valeur réelle Valor medido Valore misurato:	
1.9	±2.0 %TPM	37.6	
50.0	±1.5 °C	39.7	
26.3	±2.0 %TPM	164.0	
179.8	±1.5 °C	156.5	
Datum/Date/Date/ Fecha/Data:		Prüfer/Inspector/Vérificateur/ Verificatore/Verificador:	
2014-10-09		222	

5.0 Using the service software

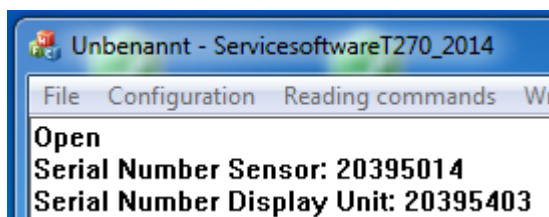
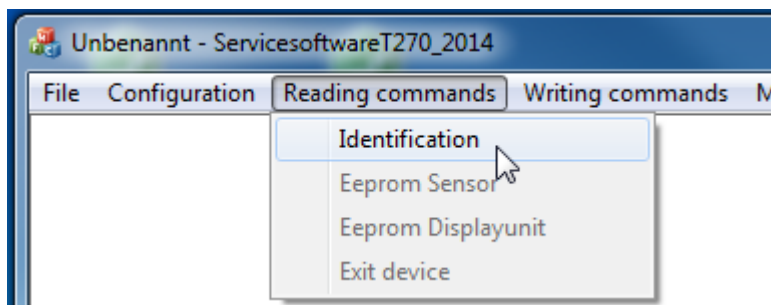
5.1 preconditions

Universal Serviceadapter configuration is done.

The testo 270_v2014 is connected via service cable 0449 2750 with the Serviceadapter 0554 6600.

5.2 Reading Command Identification

After the successful identification of the connected devices, the service software will release all the possible further features.



5.3 Reading Commands Eeprom Sensor

The screenshot shows the 'Eeprom' window with the following sections:

- Production Data:**
 - Serial No.: 20395014
 - Board No.: 20395014
 - Prod. Date: 2014-10-09
- Settings:**
 - TempLowerLimit: 0
 - TempUpperLimit: 75
 - OilTempLowerLimit: 40
 - OilTempUpperLimit: 190
 - OilTempOverrange: 200
 - TPMLowerLimit: 0
 - TPMUpperLimit: 40
 - TPMInAirLowerLimit: -500
 - TPMInAirUpperLimit: -10
- Servicedata:**
 - ActualTemp1: 39.6606
 - ActualTemp2: 156.493
 - ActualTPM1: 37.5733
 - ActualTPM2: 163.982
 - NominalTemp1: 50.0254
 - NominalTemp2: 179.813
 - NominalTPM1: 1.85416
 - NominalTPM2: 26.3
 - Inspector: 222
- Firmware:**
 - Version: 0.3.0
 - Build: 98
- TpmCalibration:**
 - ☐ CalibrationActive
 - ☐ NeedService
 - Metered Value: 0
 - Target Value: 0
 - Start Cal. Count: 0
 - End Cal. Count: 0
- Time statistics board:**
 - greater 50°C: 0
 - bet. 30 'n 50°C: 5791
 - lower 30°C: 121194
 - max. greater 50°C: 0
 - max. bet. 30 'n 50°C: 5791
 - max. lower 30°C: 24028
- Time statistics sensor:**
 - greater 200°C: 18
 - bet. 180 'n 200°C: 90
 - bet. 150 'n 180°C: 518
 - bet. 40 'n 150°C: 3206
 - max. greater 200°C: 18
 - max. bet. 180 'n 200°C: 76
 - max. bet. 150 'n 180°C: 495
 - max. bet. 40 'n 150°C: 2868
- SensorAdjust:**
 - Mm: 1110303.12947146
 - Bm: 203411501.384767
 - Mb: -2.49606854107653
 - Bb: -416.381071231638
 - ATpm0: -6.21985
 - ATpm1: -0.043624
 - ATpm2: 0.00544686
 - ATpm3: -5.03391e-005
 - ATpm4: 1.90378e-007
 - ATpm5: -3.63469e-010
 - mPtc: 1.1091
 - bPtc: 6.03799
 - mTpm: -0.2012
 - bTpm: 2.2189
 - FK: 1.56291
 - S: 11.2064
 - DeltaFMeas: -0
 - DeltaFRef: 0
 - MeasTemp20: 25
 - RefTemp20: 25
- Flags:**
 - ☒ Pretest
 - ☐ TempComp
 - ☒ OilAdjust
 - ☒ Assemblytest
 - ☒ AdjustPass
 - ☒ Service
- Polynonversion:**
 - Customer: 0
 - Oil: 0
 - Month: 0
 - Year: 0
 - Standard: 0

A 'Cancel' button is located at the bottom center of the window.

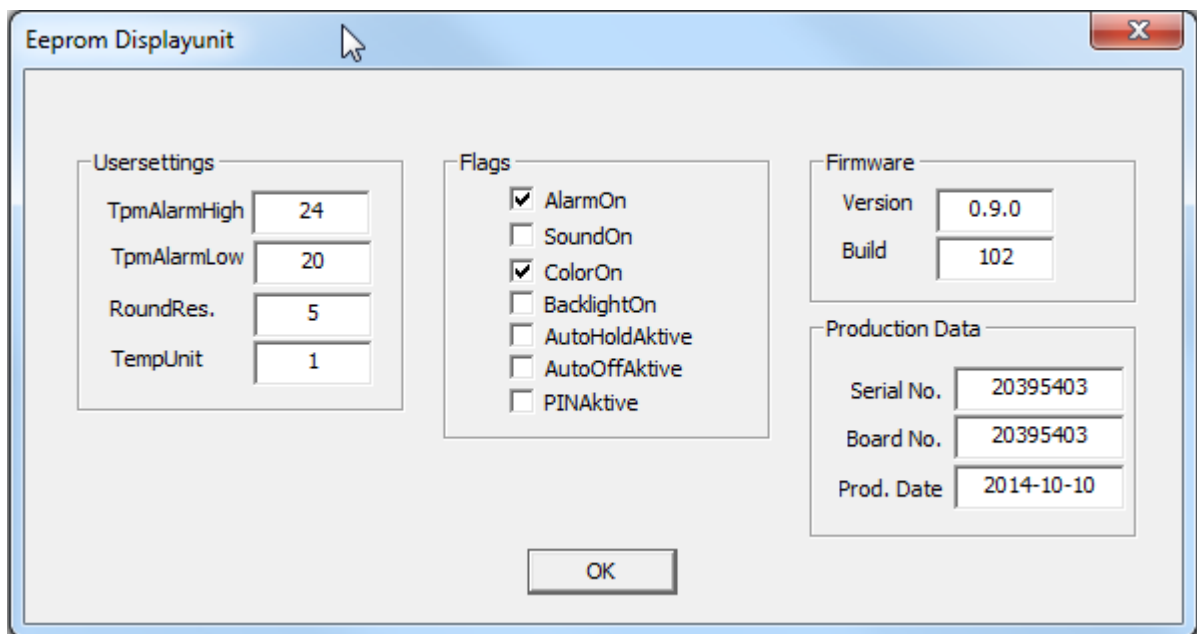
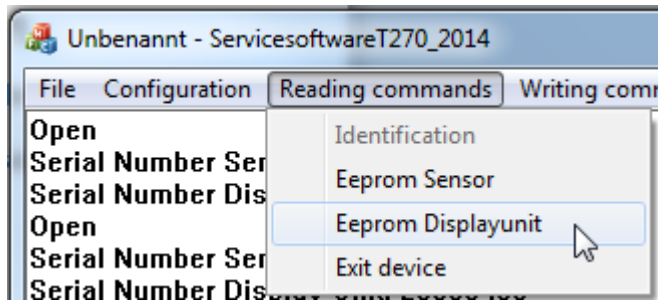
TpmCalibration: This are the adjustment coefficients resulting of a customer`s adjustment in reference oil. Empty boxes or „0“ are telling that now customer`s adjustment was done, and the only the original adjustment data are used for the measurement results.

SensorAdjustment: Show the sensor channel values at the different factory adjustment points.

Servicedata: Show the test results (Protocol values) of the last factory adjustment at testo AG, Lenzkirch.

Time statistics: Show the duration in minutes of the pcb or the sensors was kept inside the respective temperature ranges. The boxes what are named with "Max." show the longest measured duration inside the respective temperature range.

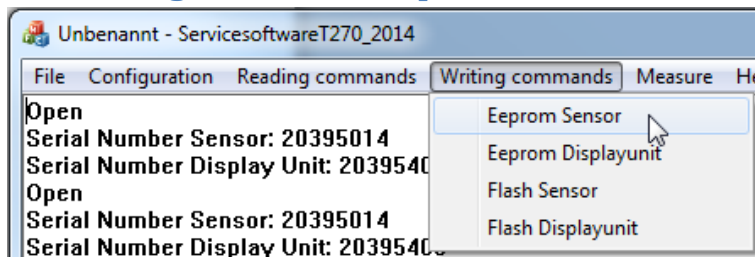
5.4 Reading Commands Eeprom Displayunit



This feature shows the current alarm settings, and the current firmware revision.

Production Data: The display units serial number (Serial No.) and the pcb-serial number (Board No.) are identically after production. In case this numbers differ, the display unit once received a new pcb by one of the service offices. The production date always refer to the pcb data.

5.5 Writing Commands Eeprom Sensor



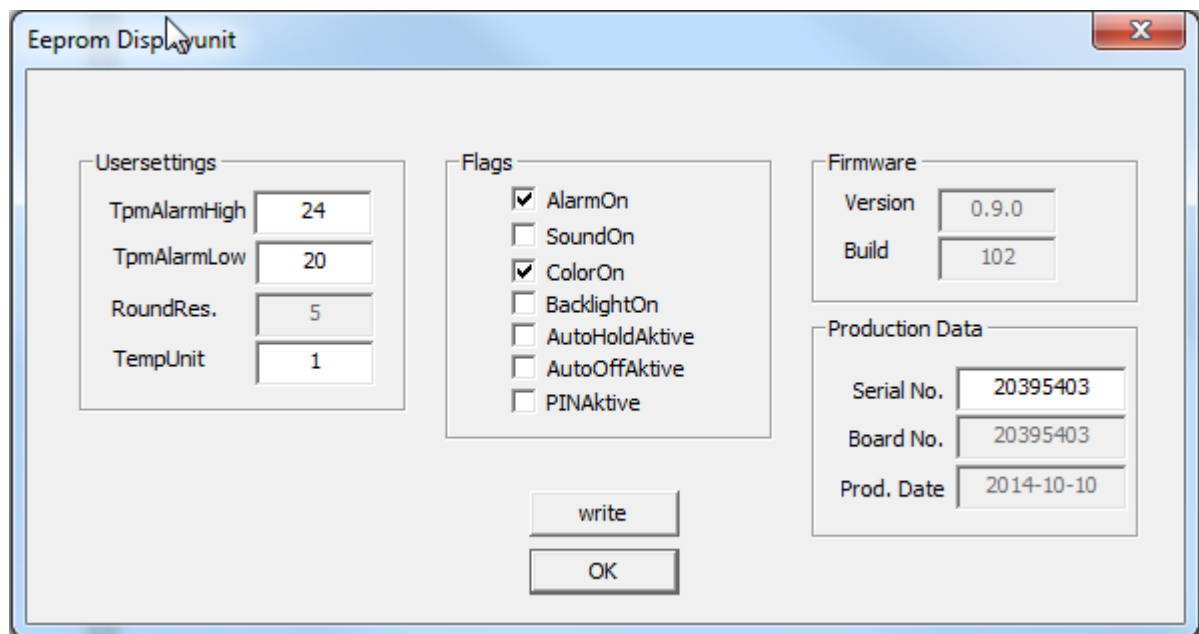
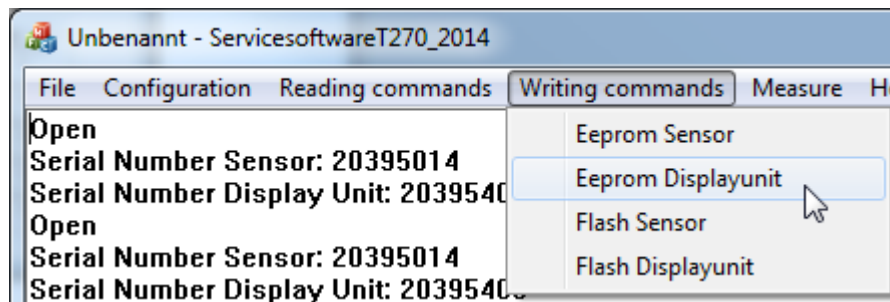
Eeprom

Production Data Serial No. 20395014 Board No. 20395014 Prod. Date 2014-10-09		TpmCalibration ☐ CalibrationActive ☐ NeedService Metered Value 0 Target Value 0 Start Cal. Count 0 End Cal. Count 0		SensorAdjust Mm 1110303.12947146 Bm 203411501.384767 Mb -2.49606854107653 Bb -416.381071231638 ATpm0 -6.21985 ATpm1 -0.043624 ATpm2 0.00544686 ATpm3 -5.03391e-005 ATpm4 1.90378e-007 ATpm5 -3.63469e-010 mPtc 1.1091 bPtc 6.03799 mTpm -0.2012 bTpm 2.2189 FK 1.56291 S 11.2064 DeltaFMeas -0 DeltaFRef 0 MeasTemp20 25 RefTemp20 25	
Settings TempLowerLimit 0 TempUpperLimit 75 OilTempLowerLimit 40 OilTempUpperLimit 190 OilTempOverrange 200 TPMLowerLimit 0 TPMUpperLimit 40 TPMInAirLowerLimit -500 TPMInAirUpperLimit -10		Time statistics board greater 50°C 0 bet. 30 'n 50°C 5791 lower 30°C 123598 max. greater 50°C 0 max. bet. 30 'n 50°C 5791 max. lower 30°C 24028			
Servicedata ActualTemp1 39.6606 ActualTemp2 156.493 ActualTPM1 37.5733 ActualTPM2 163.982 NominalTemp1 50.0254 NominalTemp2 179.813 NominalTPM1 1.85416 NominalTPM2 26.3 Inspector 222		Time statistics sensor greater 200°C 18 bet. 180 'n 200°C 90 bet. 150 'n 180°C 518 bet. 40 'n 150°C 3206 max. greater 200°C 18 max. bet. 180 'n 200°C 76 max. bet. 150 'n 180°C 495 max. bet. 40 'n 150°C 2868		Flags ☒ Pretest ☐ TempComp ☒ OilAdjust ☒ Assemblytest ☒ AdjustPass ☒ Service	
Firmware Version 0.3.0 Build 98		write Cancel		Polynonversion Customer 0 Oil 0 Month 0 Year 0 Standard 0	

Only the white boxes can be modified.

TpmCalibration: In case all boxes are set back to the configuration as above, there is no customer's adjustment effecting the measurement. Instead of this only the adjustment coefficients of the last factory adjustment are valid.

5.6 Writing Commands Eeprom Displayunit



This feature enables the alarm settings, and the temperature unit setting. (1 = °C, 2= °F).

In case of a pcb exchange the service staff need to enter the display unit serial number according to the display unit type label.

5.7 Writing Commands Flash Sensor / Flash Displayunit - Firmwareupdate testo 270_v2014 by service software

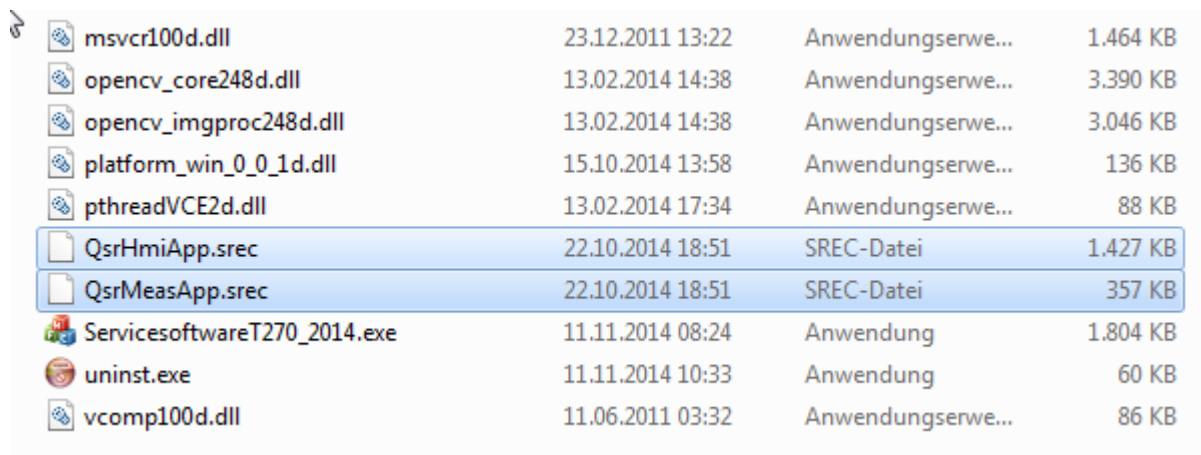
Preparation

The firmware files what should be used for the fw-update must be paste into the installation directory of the service software. The wording of the srec-firmware files must not be changed.

QsrHmiApp.srec = FW Display Unit

QsrMeasApp.srec = FW Probe

Example: Installation directory with the FW-files.

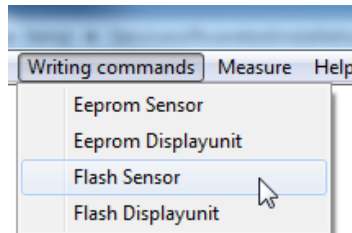
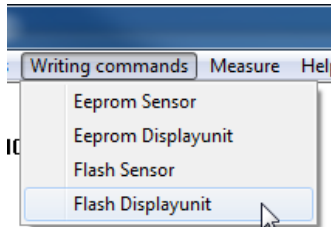


msvcr100d.dll	23.12.2011 13:22	Anwendungserwe...	1.464 KB
opencv_core248d.dll	13.02.2014 14:38	Anwendungserwe...	3.390 KB
opencv_imgproc248d.dll	13.02.2014 14:38	Anwendungserwe...	3.046 KB
platform_win_0_0_1d.dll	15.10.2014 13:58	Anwendungserwe...	136 KB
pthreadVCE2d.dll	13.02.2014 17:34	Anwendungserwe...	88 KB
QsrHmiApp.srec	22.10.2014 18:51	SREC-Datei	1.427 KB
QsrMeasApp.srec	22.10.2014 18:51	SREC-Datei	357 KB
ServicesoftwareT270_2014.exe	11.11.2014 08:24	Anwendung	1.804 KB
uninst.exe	11.11.2014 10:33	Anwendung	60 KB
vcomp100d.dll	11.06.2011 03:32	Anwendungserwe...	86 KB

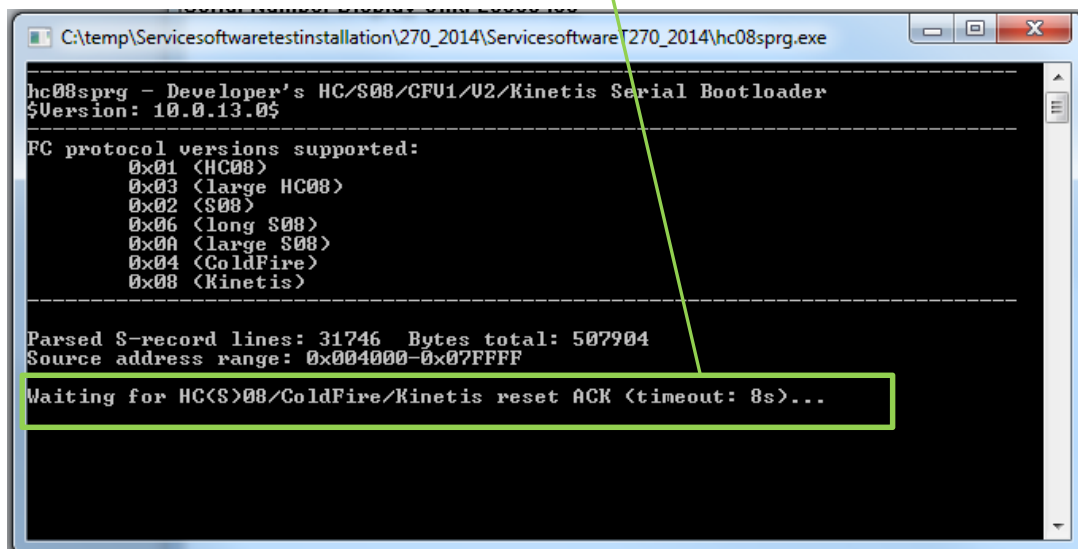
ATTENTION: before starting a **Probe-Update** „Flash Sensor“ the probe must be separated from the display unit and must be connected via adapter cable 0449 2750 to the Universal Service adapter (See: Communication).

FW-Update sequence

1. Recognize the devices (Display Unit with Probe) via reading command Identification.
(Flash Sensor: connect the probe via 0449 2750).
2. Choose Writing Command „flash ...“.



3. The embedded flash program will start up.
4. Disconnect the device for a sec. while the timeout count-down, and connect it again.

A screenshot of a command window titled 'C:\temp\Servicesoftwaretestinstallation\270_2014\ServicesoftwareT270_2014\hc08sprg.exe'. The window displays the following text:

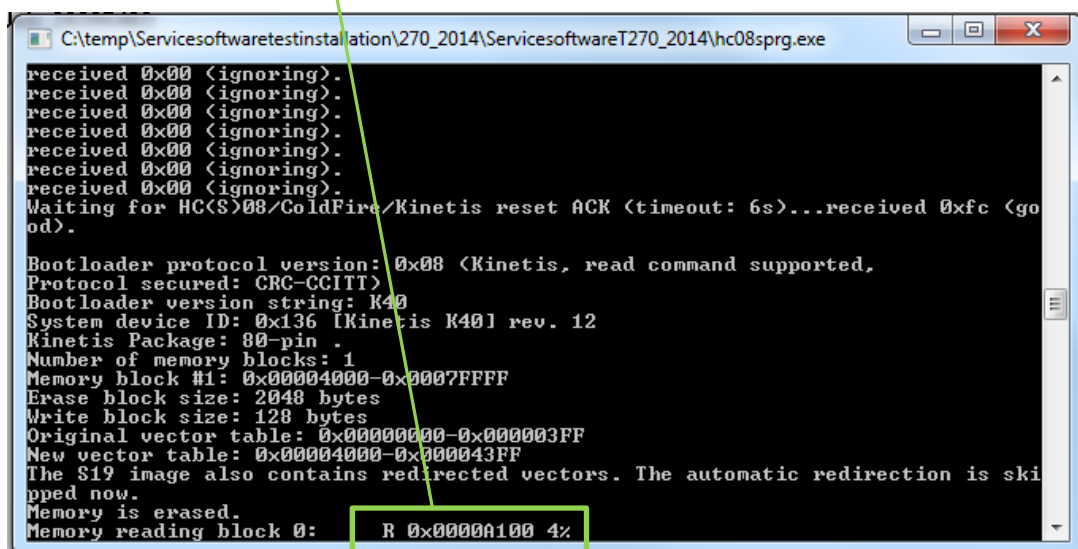
```
hc08sprg - Developer's HC/S08/CFU1/U2/Kinetis Serial Bootloader
$Version: 10.0.13.05

FC protocol versions supported:
  0x01 <HC08>
  0x03 <large HC08>
  0x02 <S08>
  0x06 <long S08>
  0x0A <large S08>
  0x04 <ColdFire>
  0x08 <Kinetis>

-----
Parsed S-record lines: 31746  Bytes total: 507904
Source address range: 0x004000-0x07FFFF
Waiting for HC<S>08/ColdFire/Kinetis reset ACK <timeout: 8s>...
```

A green box highlights the line 'Waiting for HC<S>08/ColdFire/Kinetis reset ACK <timeout: 8s>...'. A green line points from this box to the next screenshot.

5. After this reset the update sequence will be continued. After 100% update progress the device will be restarted.

A screenshot of a command window titled 'C:\temp\Servicesoftwaretestinstallation\270_2014\ServicesoftwareT270_2014\hc08sprg.exe'. The window displays the following text:

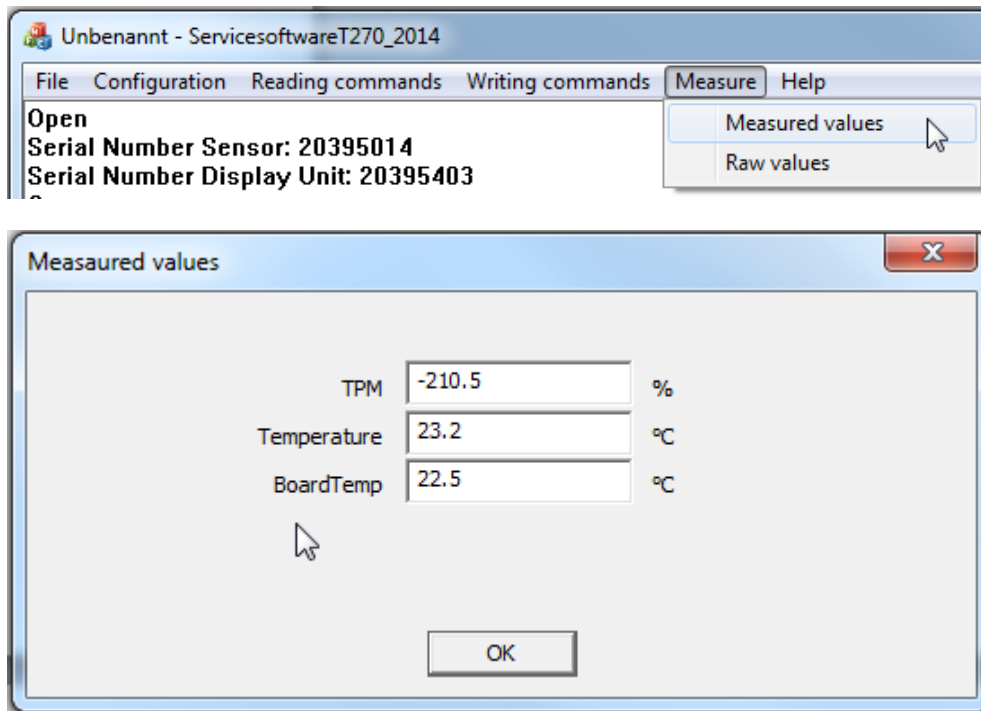
```
received 0x00 <ignoring>.
received 0x00 <ignoring>.
received 0x00 <ignoring>.
received 0x00 <ignoring>.
received 0x00 <ignoring>.
received 0x00 <ignoring>.
received 0x00 <ignoring>.
Waiting for HC<S>08/ColdFire/Kinetis reset ACK <timeout: 6s>...received 0xfc <good>.

Bootloader protocol version: 0x08 <Kinetis, read command supported>.
Protocol secured: CRC-CCITT>
Bootloader version string: K40
System device ID: 0x136 [Kinetis K40] rev. 12
Kinetis Package: 80-pin .
Number of memory blocks: 1
Memory block #1: 0x00004000-0x0007FFFF
Erase block size: 2048 bytes
Write block size: 128 bytes
Original vector table: 0x00000000-0x000003FF
New vector table: 0x00004000-0x000043FF
The S19 image also contains redirected vectors. The automatic redirection is skipped now.
Memory is erased.
Memory reading block 0: R 0x0000A100 4%
```

A green box highlights the line 'Memory reading block 0: R 0x0000A100 4%'. A green line points from this box to the next screenshot.

5.8 Measure Measured values

The online measurement is done in a 1 sec measuring cycle.



5.9 Measure Raw values

The online measurement of the sensor channel values is done in a 1 sec. measuring cycle.

