HUMOR 20

FEUCHTEKALIBRATOR

HUMIDITY CALIBRATOR

CALIBRATEUR D'HUMIDITÉ

Bedienungsanleitung
Konfigurations- & Kalibriersoftware

Manual
Configuration & Calibration Software

Notice
Logiciel de Configuration et de Calibration

JLC INTERNATIONAL

JLC International
Phone: 215-340-2650
Fax: 215-340-3670

948 Lenape Drive Town Center, New Britain, PA 18901
email: jlcusa@jlcinternational.com
www.jlcinstrumentation.com & www.jlcinternational.com

HAFTUNGSEINSCHRÄNKUNG

E+E Elektronik® haftet nicht für irgendwelche Schäden bzw. Folgeschäden (beispielsweise, aber nicht beschränkt auf Gewinn-Entgang, Geschäftsunterbrechung, Informations- und Datenverlust oder irgendwelchen anderen Vermögensschäden), die durch Installation, Verwendung und auch Unmöglichkeit der Verwendung eines Softwareprodukts von E+E Elektronik® und eventuell damit zusammenhängenden Supportleistungen bzw. Nichtleistung von Support entstehen.

E+E Elektronik® Ges.m.b.H. übernimmt für diese Publikation keinerlei Garantie und bei unsachgemäßer Handhabung der beschriebenen Produkte keinerlei Haftung.
Diese Publikation kann technische Ungenauigkeiten oder typographische Fehler enthalten. Die hier enthaltenen Informationen werden regelmäßig überarbeitet. Diese Änderungen werden in späteren Ausgaben implementiert. Die beschriebenen Produkte können jederzeit verbessert oder geändet werden.
Technische Änderungen vorbehalten.

LIMITED LIABILITY

E+E Elektronik® is not liable for any damages or consequential damages (for example, but not restricted to loss of earnings, interruption of business, loss of information and data or any other pecuniary damages), that result from the installation, usage and also impossibility of usage of a software product from E+E Elektronik® and support services possibly associated with it or non-performance of support.

E+E ELEKTRONIK® Ges.m.b.H. takes no guarantee and liability neither upon this publication nor in case of improper treatment of the describted products.
The document may contain technical inaccuracy and typographic errors. The content information will be revised steadily. These changes will be implemented in later versions. The described products can be improved and changed at any time.
Technical data are subject to change.

RESPONSABILITE LIMITEE

E+E Elektronik® décline toute responsabilité en cas de dommages consécutifs ou autres (par exemple, mais sans exhaustivité aucune, en cas de perte de revenus, d'interruption d'activité, de perte d'information et de données ou de tout autre dommage financier), résultant de l'installation, de l'utilisation et également d'une impossibilité d'utilisation d'un logiciel de E+E Elektronik® et des services de support qui y sont possiblement liés ainsi que de la non exécution du support.

E+E ELEKTRONIK ® Ges.m.b.H. ne garantit et ne peut pas être tenu responsable du contenu de cette publication ainsi que de l'utilisation incorrecte des produits décrits.
Le document peut contenir des imprécisions techniques ou des erreurs typographiques. Les informations contenues seront révisées immédiatement. Ces modifications seront implémentées dans les versions futures. Les produits décrits peuvent être améliorés et modifiés à tout moment.
Les caractéristiques techniques sont sujettes à changement.

INHALTSVERZEICHNIS

TABLE OF CONTENTS

TABLE DES MATIERES

CONFIGURATION AND CALIBRATION SOFTWARE

The enclosed communications software was created to make the configuration process and the procedure for a new calibration (adjustment) of the humidity calibrator easier for the user.

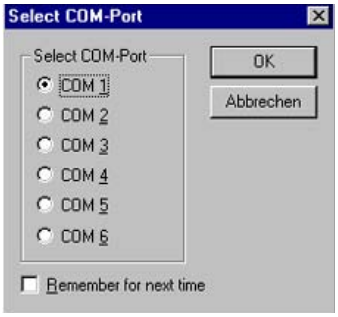
1 INSTALLATION

1. Insert the enclosed CD-ROM into your PC drive.
2. Close all other currently active programs.
3. Open the file setup.exe in the folder HUMOR20-Configurator\Software.
4. Follow the installation routine.
5. Open the configuration software.

2 SETTINGS

1. Connect the humidity calibrator to your PC with the enclosed RS232 interface cable.

2. Select the appropriate serial interface from the corresponding menu.



3 STARTING THE SOFTWARE

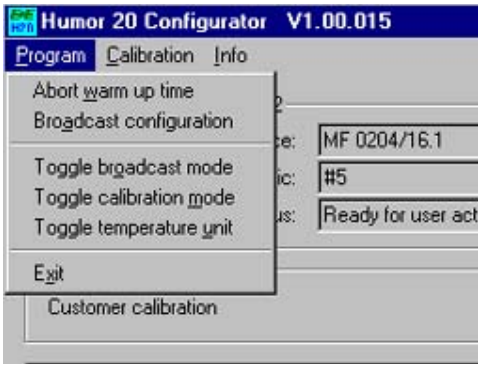
In this menu you will find general information about the instrument:

Serial number device: ID of the humidity calibrator
Serial number electronic: ID of the electronic rack
Status: current operating status

calibration mode: information on the current calibration mode:
- Factory calibration
- Customer calibration

4 MENU BAR

4.1 Program



In the "Program" pull-down menu you will find all of the functions for configuring the humidity calibrator according to customer requirements. You can also exit the program from this menu.

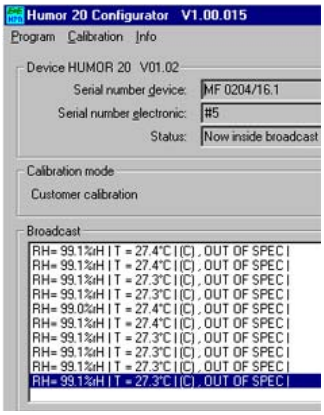
Abort warm up time:

Interrupts the warm-up time (20 min) so you do not have to wait an unnecessarily long time (e.g.: for presentations in front of customers or at exhibitions). For everyday use, the warm-up time should be observed under all circumstances in order to achieve precise measurement results.

Broadcast configuration:

Set a time interval. In Broadcast Mode (see Toggle broadcast mode), the calculated reference value will be updated on the monitor or written into a log-file according to this time interval.

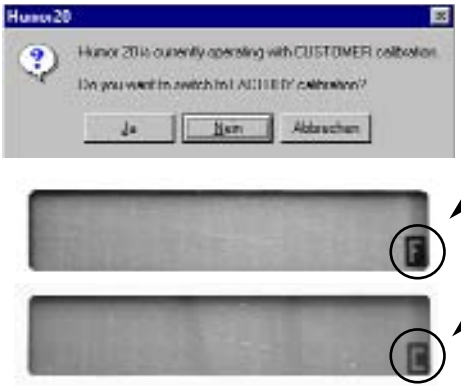
Toggle broadcast mode:



In Broadcast Mode, the calculated reference value, the measurement chamber temperature, and any existing fault reports will be displayed on the monitor or written into a log-file according to the selected time interval.

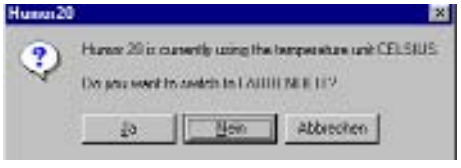
Log-File: A secondary table titled "broadcast" is automatically set up in the program window. One file is generated for each day in this table. The above mentioned data iis stored in these files, which allows this data to be retrieved at a later time.

Toggle calibration mode:



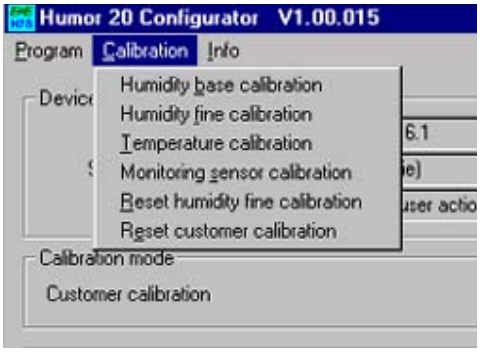
The humidity calibrator has 2 different calibration modes. You can choose between the factory calibration and a customer calibration you perform yourself.
The current calibration mode is indicated in the Start menu of the software and also by an
"F" (Factory) or an
"C" (Customer) on the display of the humidity calibrator.

Toggle temperature unit:



The temperature units are toggled from SI to US units and the temperature is displayed in degrees Fahrenheit instead of degrees Celsius.

4.2 Calibration

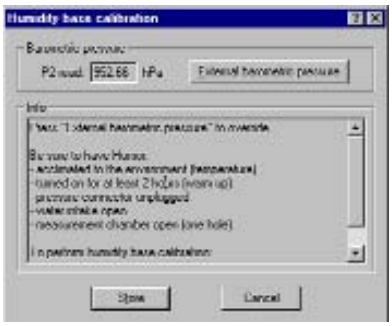


The "Calibration" pull-down menu permits the recalibration of the entire humidity calibrator.

Note: Menu items can be selected only in "Customer calibration mode."

According to the accuracy requirements, you can choose between a simple offset "Humidity base calibration" or a high-precision, multi-point "Humidity fine calibration."

Humidity base calibration:



The base calibration permits self-adjustment of the humidity calibrator.

Procedure: (as described on the monitor)

1. Acclimation of the HUMOR 20 to environmental conditions. (Temperature equilibrium)
2. HUMOR should have been in operation for min. 2h. (Stabilisation time after warm-up phase)
3. Depressurise the entire instrument. (Shut off media supply, open water inlet, remove 1 blind plug of measurement chamber cover)
4. If a high-precision, external pressure reference is available, then press the button "External barometric pressure" and overwrite the suggested value. Otherwise P_2 (pressure transmitter in the measurement chamber) will be used as a reference.

Operation:

Step 1: The offset of the absolute pressure transmitter in the measurement chamber P_2 (0-2 bar) is equalised relative to the input reference value. If no external reference is available (not necessary!) P_2 is used as the reference value.

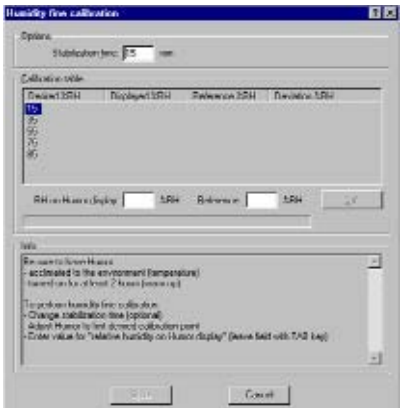
Step 2: The offset of the absolute pressure transmitter in the saturation chamber P_1 (0-10 bar) is equalised to $P_2 = P_{Reference}$.

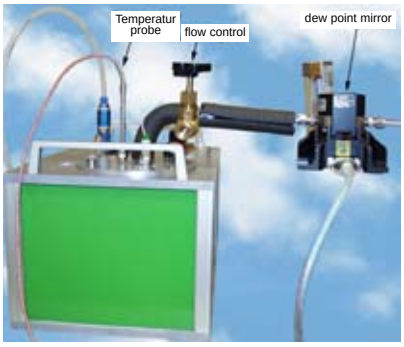
Step 3: Both transmitters P_1 and P_2 are now equalised to the ambient pressure, which completes the calibration (adjustment) at 100% RH.

$$RH = \frac{p_2}{p_1} \times 100\% = \frac{978{,}73\text{hPa}}{978{,}73\text{hPa}} \times 100\% = 100\%$$

Just by this offset correction, the humidity calibrator achieves an accuracy < ± 0.75 %RH even without an external pressure reference. Therefore, a base calibration is usually sufficient.

Humidity fine calibration:





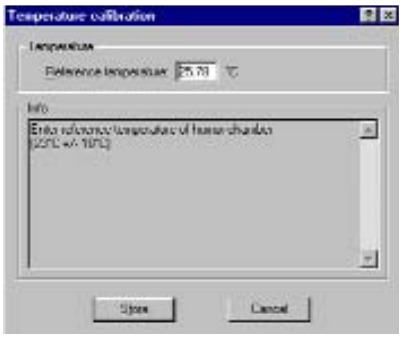
For the fine calibration, the Humor is equalised at 6 points to a high-precision external reference (certified dew-point mirror).

Procedure:

1. Acclimation of the HUMOR 20 to environmental conditions. (Temperature equilibrium)
2. HUMOR should have been in operation for min. 2h. (Stabilisation time after warm-up phase)
3. Select an appropriate stabilisation time.
4. Set the measurement point.
5. Allow stabilisation time to elapse.
6. Then input the reference value into the "Reference" field and press save.
7. Repeat the steps above for 2-5 measurement points.
8. For the 6th measurement point (100% RH) depressurise the entire system (shut off media supply, open water inlet, remove a blind plug of the measurement chamber cover).
9. After completion of the calibration, the calculated deviations relative to the external reference are saved in the microprocessor. This completes the desired adjustment of the characteristic line.

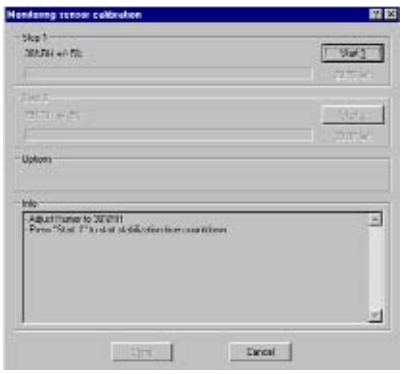
Note:
E+E development engineers are available to assist you with connecting the external reference system.

Temperature calibration:



1. Setup an external temperature reference in the measurement chamber.
2. Enter reference value in the input field.
   Attention: Temperature must be in the range 23°C +10°C!
3. Pressing "Save" completes the adjustment of the temperature measurement.

Monitoring sensor calibration:



This function allows the plausibility transmitter, which is used for monitoring tasks, to be adjusted at 2 points.

Procedure:

1. Acclimation of the HUMOR 20 to environmental conditions. (Temperature equilibrium)
2. HUMOR 20 should have been in operation for min. 2h. (Stabilisation time after warm-up phase)
3. Set the lower desired value for 30% RH.
4. After the stabilisation time has elapsed (30 min.) the "Monitoring Sensor" is equalised to the reference value of the HUMOR 20.
5. Set the upper desired value for 70% RH.
6. After the stabilisation time has elapsed (30 min.) the "Monitoring Sensor" is equalised to the reference value of the HUMOR 20.

Reset humidity fine calibration:

Resets a completed fine calibration to the values before the most recent adjustment.

Reset customer calibration:

All customer calibration data (basic and fine calibration) is reset to default values.

4.3 Pull down Menu: Info

Provides information on the current software version.