

## INSTRUCTION FOR USE

By means of this tool it is possible to verify measurement accuracy (calibration) and optionally also new setting (adjustment) of instruments measuring air relative humidity. In many cases costly special device for humidity generation (calibration chamber) can be substituted. In the vessel, air tightly connected to the humidity transmitter, relative humidity is generated. The value depends on solution applied inside of the vessel. Solutions for generation of selected humidity levels (humidity standards) are not a part of calibration vessel AR006111 and must be ordered separately.

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### Warning

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- Solutions of humidity standards are dangerous to health! In case of contact with them eyes and skin are irritated. In case of skin or eyes contamination wash skin or eyes by large amount of water!
  - In case of ingesting the solution, find out a medicine doctor!
  - Manipulate carefully with glass ampoules!
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## GENERAL CONDITIONS FOR CALIBRATION OR ADJUSTMENT WITH AR006111

- calibration vessel is possible to use for all hygrometers using replaceable sensor cover with G 3/8" thread (see the list of Guilcor devices in the appendix)
- calibration (optionally adjustment) is performed at temperature of  $23\text{ °C} \pm 2\text{ °C}$
- calibrated instrument (or its external humidity probe), calibration vessel and solution in the vessel must have identical temperature. For comparison: temperature difference of  $1\text{ °C}$  between humidity sensor itself and the solution in calibration vessel causes humidity measurement error up to 6 %RH!
- from the above reason calibration vessel including connected humidity sensor should not be exposed to solar radiation or air draught – ambient temperature must not change during the settling time and during reading of measured values. The best way is to put entire device under calibration and the vessel to a thermo box of suitable size (e.g. polystyrene box with tight lid).

- if ambient temperature differs from recommended value of 23 °C, it is possible to use correction table of humidity standard specified on the humidity standard packaging. Table describes dependence of humidity standard on its temperature. In that case accurate ambient temperature is necessary to measure by a thermometer.
- ampoule with humidity standard as well as the textile application pads are designed for unrepeatable use

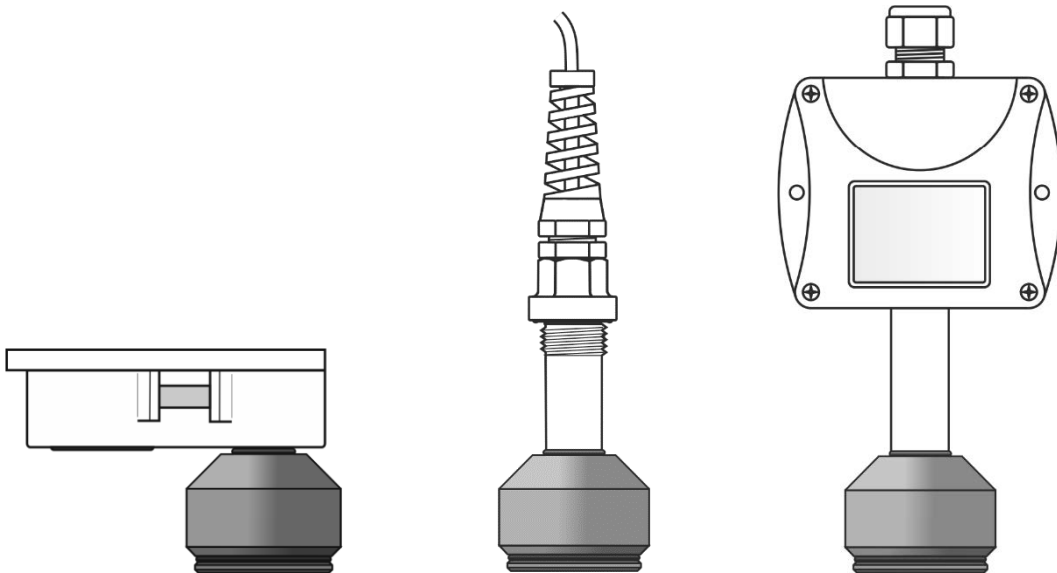
## **CALIBRATION OR ADJUSTMENT PROCEDURE WITH CALIBRATION VESSEL**

- the below procedure only describes, how to substitute large humidity calibration chamber with calibration vessel for humidity calibration of the concrete instrument. The calibration procedure of the concrete instrument itself is not affected by this and it is necessary to follow the calibration procedure of the concrete instrument!
- check before calibration if both sealing O-rings are undamaged and required humidity standards including textile application pads are available. For adjustment two humidity standards are necessary (typically 10 %RH and 80 %RH).
- wash out open calibration vessel carefully before the procedure by water (best way is to use distilled water) and carefully dry out (it is recommended to use air flow). Even minimum remains of pollution or water influence the ingredients of the humidity standard solution and this way the value of generated humidity!
- carefully unscrew from calibrated instrument (or its external probe) the sensor cover and replace it with dry calibration vessel without a lid and tighten gently. Do not touch the humidity sensor of the instrument and keep the sensor from the damage by the sensor cover or calibration vessel!
- insert new unused textile application pad to the dry clean lid of calibration vessel
- check if instrument under calibration with calibration vessel, lid and ampoule with humidity standard solution have identical temperature (temperature differences can occur e.g. due to drying of calibration vessel by hot air, storing humidity standards at different place etc.). Let components together to allow temperature to stabilize.
- break the seal of the ampoule at marked narrowed point
- empty the entire ampoule content to the center of textile pad in the lid and continue without delay with the following step
- hold the instrument with calibration vessel opening for the lid downwards and screw the lid with applied humidity standard. Tighten lid carefully – calibration vessel must be air tightly closed. The working position of the instrument or probe with applied calibration vessel is with lid downwards. No other positions are allowed (see figures)!

- put all set in working position to suitable thermo box to ensure correct condition for temperature and humidity settling. The minimum required time for humidity settling inside of the calibration vessel is 3 hours at constant ambient temperature.
- after necessary settling time read humidity value from calibrated instrument and compare with the value of humidity standard
- before next step with different humidity standard it is necessary the wash out calibration vessel perfectly and dry out and use new textile pad
- repeat all procedure as described above

## WORKING POSITION OF DEVICES WITH APPLIED CALIBRATION VESSEL

Do not flip over calibration vessel with applied humidity standard – the only **allowed position is with lid downwards** (see figures).



## LIQUIDATION OF WASTE

All waste material must be disposed of ecologically!

# LIST OF Guilcor DEVICES

The list contains devices that can be calibrated or adjusted using the AR006111 calibration vessel.

## Txxxx devices

AR006568	AR003829	AR006062	AR006633	AR003831	AR003832
AR003830	AR004196	AR006647	AR006634	AR005472	AR006623
AR003866	AR005146	AR003871	T3413D	AR006612	AR004933
AR004384	AR006582	T3319P	AR006635	AR004928	AR006628
AR004611	AR006583	AR006657	T3417D	AR006619	AR004794
AR006571		T6341	AR005356	AR005708	AR006629
AR006569		AR006650	AR006638	AR006615	AR006632
AR004967		AR006651	AR005439		
AR004303			T6441		
AR006570			AR004927		
T3117D			AR006641		

## Hxxxx devices

\$	AR006684	AR006689	AR004601	H3541R
AR005168	H3331P	AR006690	AR004758	AR006700
AR006680	AR006713	H3431P	AR006696	
H3023	H6321	H3433	AR006715	
AR004558	H7331	AR006710	H6521	
AR005071		H6421	AR006699	
AR006676		AR006693	AR006700	
AR006770		H7431		

## Other devices

AR006269	AR004946	AR004146	AR003823	AR006553
AR006274	AR004532		AR003823	AR006556
AR006292	AR006295		S3121	
			R3120	
			R3121	

## RH+T probes

DSRH/C	<i>devices AR004617, AR005351, \$</i>	<i>, AR005075, AR003827,</i>
DSRHxx	<i>AR003828 devices AR004617, AR005351, AR006586, AR005075,</i>	
DIGIL/E	<i>\$</i>	<i>, AR003828 devices AR005169, AR006089, AR006554,</i>
DIGIL/M	<i>AR006557</i>	
	<i>devices AR006359, AR005173, AR006362, AR004926, AR006363,</i>	
	<i>AR006364, AR005056</i>	

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