Supplementary Instruction Manual MesR

ALMEMO® 500
How to activate a function channel MesR

V7-Technologie

English
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2 Explanation of Symbols

! Requirement

Note

Result

Back Text displayed within a software

3 Information regarding the function channel MesR

3.1 Usage of the function channel MesR

Thanks to the function channel MesR it is possible to use the measured value of a measuring channel that is marked with the function abbreviation *R in its channel designation throughout all measuring circuit boards. It is also possible to use measured values of different measuring circuit boards in one arithmetic channel.

The function channel MesR can only be configured in a V5 or V6 plug.

Arithmetic channels that shall use the measured values of the function channel MesR can only be configured in a V5 or V6 plug.

The function channel MesR and the measuring channel marked with the channel abbreviation *R must not be located on the same measuring circuit board.

The sensor, in which the function channel MesR is set, must be on a measuring circuit board featuring a higher measuring circuit board address than the sensors, to which the function abbreviation *R has be designated.
4 How to assign the function abbreviation *R

Do not reconnect the sensors after you have assigned the function abbreviation *R and configured the function channel MesR.

3.2 Example regarding relative humidity in a climatic chamber

In the present Supplementary Instruction Manual, the following example will be described:

The relative humidity shall be calculated by the arithmetic channel tdUw.

To do so, the dew point from a measuring channel featuring the range td will be used. The function abbreviation *R will be assigned to this measuring channel.

The arithmetic channel tdUw will be adjusted on a measuring circuit board featuring a higher measuring circuit board address.

The arithmetic channel tdUw receives the measured data from the function channel MesR. The function channel MesR receives the measured data from the measuring channel featuring the function abbreviation *R.

3.3 The update rate of the function channel MesR

The measured value of the function channel MesR is updated approximately every two seconds. The update rate depends on the number of active measuring channels and on the storage cycle (scanning cycle respectively output cycle).
4 How to assign the function abbreviation *R

You must be logged into the app.
The current measurement must be stopped.

See Instruction Manual ALMEMO® 500.

1. Connect the sensor, in which you want to assign the function abbreviation *R to a measuring circuit board with a lower measuring circuit board address than the sensor you want to use for establishing the function channel MesR.

2. In the home screen of the app, tap on the button .

3. Tap on the arrow > next to Device lists.

4. Tap on the arrow > next to measuring circuit board connected to the sensor, in which you want to assign the function abbreviation *R.

Assign the function abbreviation *R to a measuring channel, whose measured value shall be used by an arithmetic channel on another measuring circuit board.

In the example presented here, the dew point (td) shall be provided.

5. Tap on the arrow > next to Sensor overview .

All sensors connected to the measurement circuit board will be displayed.

6. Tap on the arrow > next to the sensor in which you want to assign the function abbreviation *R.

7. Tap on the arrow > next to Sensor channels.

8. Tap on the arrow > next to the measuring channel to which you want to assign the function abbreviation *R.

9. Tap on the arrow > next to Range selection.

10. Untick the checkbox next to Locking level 1.

11. Tap on the field next to Range.

12. Tap on the desired measuring range.
5 How to set up the function channel MesR

In the example presented here, td respectively DT, td °C shall be selected.

- The measuring channel now has the correct measuring range.

13. Tap on the button Back once.

14. Tap on the arrow > next to Channel designation, function abbreviation.

15. Tap on the button next to Provide measured value as global operand (*R).

- The function abbreviation *R will be registered in the channel designation.
The measured value will be provided as global operand.

5 How to set up the function channel MesR

The function channel is used to acquire operands from other measuring circuit boards. The function channel must be set up in a sensor with a V5 or a V6 plug that is connected to the measuring circuit board, to which the sensor with the arithmetic channel is connected.

1. In the home of the app, tap on the button .

2. Tap on the arrow > next to Device list.

3. Tap on the arrow > next to the measuring circuit board, to which the sensor you want to use to set up the function channel MesR is connected.

4. Tap on the arrow > next to Sensor overview  .

- All sensors connected to this measuring circuit board will be displayed.

5. Tap on the arrow > next to the sensor in which you want to set up the function channel MesR.

6. Tap on the arrow > next to Sensor channels.
6 How to scale the measured value

7. Tick the checkbox next to the measuring channel, in which you want to set up a function channel MesR.
8. Tap on the arrow > next to Range selection.
9. Untick the checkbox next to Locking level 1.
10. Tap on the field next to Range.
11. Tap on the measuring range MesR.
   ➢ The function channel MesR has now been set up.
12. Tap on the field next to Dimension.
13. Enter the dimension of the measured values you receive via the function channel MesR.

👉 In the example presented here, °C shall be entered.

➢ The measuring channel is now provided with a dimension.

➢ The measured values used by the function channel MesR are acquired from the measuring channel with the function abbreviation *R.

In case several measuring channels within one measuring device have received the function abbreviation *R, it will always be the measured value received from the measuring channel with the function abbreviation *R with the next lower channel number that will be used.

6 How to scale the measured value

👉 The measured value is transmitted from the function channel as a plain numeric value without decimal point. The correct point position is set in the function channel MesR with the exponent.

➢ To identify the scaling necessary, compare the displayed measured value received from the measuring channel with the function abbreviation *R with the one received from the function channel
7 Use of the function channel MesR as a reference channel to an arithmetic channel

MesR.
Using the exponent, the point can be shifted to the left (-1, -2, -3...) or to the right (+1, +2, +3...).

1. Follow the steps 1 to 6 in chapter 5.
2. Tap on the arrow > next to the function channel MesR.
3. Tap on the arrow > next to Scaling values.
4. Tap on the field next to Exponent.
5. Enter the desired exponent.

By modifying the exponent, the point can be shifted to the left (using a negative number) or to the right (using a positive number).

7 Use of the function channel MesR as a reference channel to an arithmetic channel

The sensor, in which an arithmetic channel shall be set up and that shall use the measured values of the function channel MesR must have a V5 or a V6 plug.

1. In the home screen of the app, tap on the button.
2. Tap on the arrow > next to Device list.
3. Tap on the arrow > next to the measuring circuit board, to which the sensor, in which you want to establish an arithmetic channel, is connected.
4. Tap on the arrow > next to Sensor overview.
   ➢ All sensors connected to the measuring circuit board will be displayed.
5. Tap on the arrow > next to the sensor, in which you want to establish an arithmetic channel.
7 Use of the function channel MesR as a reference channel to an arithmetic channel

6. Tap on the arrow > next to Sensor channels.

7. Tap on the arrow > next to the measuring channel that you want to set as an arithmetic channel.

8. Tap on the arrow > next to Range selection.

9. Untick the checkbox next to Locking level 1.

10. Tap on the field next to Range.

11. Tap on the desired range of calculation.

   In the example presented here, tdUw shall be selected.

12. Tap on the field next to Reference channel 1.

13. Tap on the desired reference channel.

   In the example presented here, the channel, in which the temperature is measured in °C, shall be set as reference channel 1.

14. Tap on the field next to Reference channel 2

15. Tap on the desired reference channel.

   In the example presented here, the function channel MesR shall be set as reference channel 2.

   ➤ The arithmetic channel uses the reference channel to generate a measured value.

   In the example presented here, the arithmetic channel tdUw generates a humidity value by using the temperature and the dew point.
Despite greatest diligence, the possibility of incorrect information cannot be excluded. Subject to technical modifications without prior notice.
You will find the present and further Instruction Manuals, as well as the
ALMEMO® Manual on www.ahlborn.com under the tab SERVICE on
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