

Humidity, Temperature and Dew point Transmitter LCD Display user's manual

Use LCD and capacitance touch buttons for device settings, include relative humidity temperature zero-point correction or alarm condition setting.

Rev. 1.1 April 2017

Rev. 1.2 March 2018

Rev. 1.3 November 2018

Abstract

This document describes how to complete settings using the LCD display and capacitive touch buttons, including monitor settings, analog or digital output settings, unit settings, output filter settings, zero-point correction for temperature and relative humidity, alarm output settings and more.



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1. Into Setup Page

Press ▲, ▼ and OK at the same time at least 3 seconds for into setting page.
It will be exited from setup page if no action on buttons within one minute.

Note: If LCD module was installed after power supply was turned on. It shows nothing on the display. At this time, press ▲, ▼ and OK at the same time at least 3 seconds, display will be turned on and into setup page.

2. Functions

- LCD display setting
- Analog output setting for current or voltage output
- RS485 setting
- Unit setting
- Output filter setting
- Relative humidity and temperature offset adjustment
- Alarm output setting
- Product information

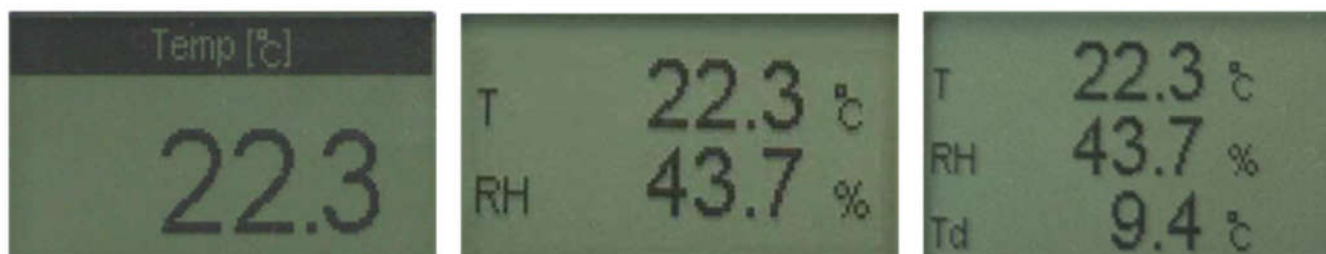
3. Display

Three mode for display

- Large : Only one physical quantity was displayed. For current output version or voltage output version, this physical quantity was set by OUT1 setting.
- Standard : Two physical quantities were displayed. For current output version or voltage output version, these physical quantities were set by OUT1 and OUT2 setting. First one was referenced to OUT1 and second one was referenced to OUT2.
- 3-Line : Three physical quantities were displayed. For current output version or voltage output version, upper two of these physical quantities were set by OUT1 and OUT2 setting. First one was referenced to OUT1 and second one was referenced to OUT2.

The available physical quantity were vary by product version

- CAEL-HTx without psychrometric calculations
 - (T) temperature, (RH) relative humidity
- CAEL-HTx with psychrometric calculations
 - (T) temperature, (RH) relative humidity, (Td) dew point temperature,
 - (A) absolute humidity, (Tf/Td) frost/dew point temperature, (R) mixing ratio,
 - (S) enthalpy, (Tw) wet bulb temperature, (E) water vapor pressure
- CAEL-DP
 - (T) temperature, (RH) relative humidity, (Td) dew point temperature,
 - (Tf/Td) frost/dew point temperature, (PPMv), (PPMw)



4. Output setting for current or voltage output version

Two channels available

- OUT1 and OUT2

The available physical quantity were vary by product version

- CAEL-HTx without psychrometric calculations
 - (T) temperature, (RH) relative humidity
- CAEL-HTx with psychrometric calculations
 - (T) temperature, (RH) relative humidity, (Td) dew point temperature,
 - (A) absolute humidity, (Tf/Td) frost/dew point temperature, (R) mixing ratio,
 - (S) enthalpy, (Tw) wet bulb temperature, (E) water vapor pressure
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 - (Tf/Td) frost/dew point temperature, (PPMv), (PPMw)

Scale range

- High scale, available value -9999 ... 9999, adjusting unit 1
- Low scale, available value -9999 ... 9999, adjusting unit 1

Analog range, only for voltage output version

- 0 ... 10V
- 0 ... 5V
- 0 ... 1V



5. RS485 setting

Slave ID

- Available value 1 ... 247

Baud Rate

- 9600 bps
- 19200 bps
- 38400 bps
- 57600 bps
- 115200 bps

Data Format

- N81-None Parity Check, 8 Data bit, 1 Stop bit
- N82-None Parity Check, 8 Data bit, 2 Stop bit
- E81-Even Parity Check, 8 Data bit, 1 Stop bit
- E82-Even Parity Check, 8 Data bit, 2 Stop bit
- O81-Odd Parity Check, 8 Data bit, 1 Stop bit
- O82-Odd Parity Check, 8 Data bit, 2 Stop bit

6. Unit setting

- Metric
- Imperial

7. Physical quantity output range

Item	Metric	Imperial
Temperature <u>T</u>	-40 ... 120 °C	-40... 248 °F
Relative Humidity <u>RH</u>	0 ... 100 %	0 ... 100 %
Dew point <u>Td</u>	-20 ... 100 °C	-4 ... 212 °F
Frost/dew point <u>Tf/Td</u>	-20 ... 100 °C	-4 ... 212 °F
Wet bulb temperature <u>Tw</u>	-40 ... 100 °C	-40 ... 212 °F
Water vapor pressure <u>E</u>	0 ... 1013 mbar	0 ... 14.7 psi
Mixing ratio <u>R</u>	0 ... 30000 g/kg	0 ... 210000 gr/lb
Absolute humidity <u>A</u>	0 ... 550 g/m ³	0 ... 240 gr/ft ³
Enthalpy <u>S</u>	-40 ... 40000 kJ/kg	-10 ... 20000 BTU/lb

8. Filter setting

Output filter makes output become smooth and reduced the response range

- Off : turn off filter function (default)
- Light
- Middle
- Heavy

9. Offset adjustment

Both Relative humidity and Temperature are available

- available value for temperature adjustment ±100.0 °C
- available value for relative humidity adjustment ±100.0 %

10. Alarm setting

Mode - Alarm relative one or two physical quantities

- Single using one physical quantity
- Dual using two physical quantities

Logic - Alarm turn ON logic based on 1st physical quantity AND/OR 2nd physical quantity

This is only available on dual mode.

- AND when both alarm conditions are match then the relay output active
- OR any one of two alarm condition is match then the relay output active

Hysteresis - The Hysteresis setting defines a tolerance band for suppressing alarm alerts. The function prevents multiple alarm alerts if the reading oscillates around the specified threshold.

- 1st hysteresis, available value 0 ... 9999, adjusting unit 0.1
- 2nd hysteresis, available value 0 ... 9999, adjusting unit 0.1

Delay - The alarm delay property enables you to configure advanced alarms so that they will not turn ON unless their triggering conditions remain true for a specified period.

- alarm delay, available value 0 ... 3600 second

Latch - The alarm will turn OFF if the process value goes outside alarm operation range. This can be prevented by using a latch, which holds the alarm output until the power supply turns OFF once the process value enters the alarm range.

- Disable latch, Off
- Enable latch, On

1st / 2nd physical quantity were vary by product version

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 - (T) temperature, (RH) relative humidity, (Td) dew point temperature,
 - (A) absolute humidity, (Tf/Td) frost/dew point temperature, (R) mixing ratio,
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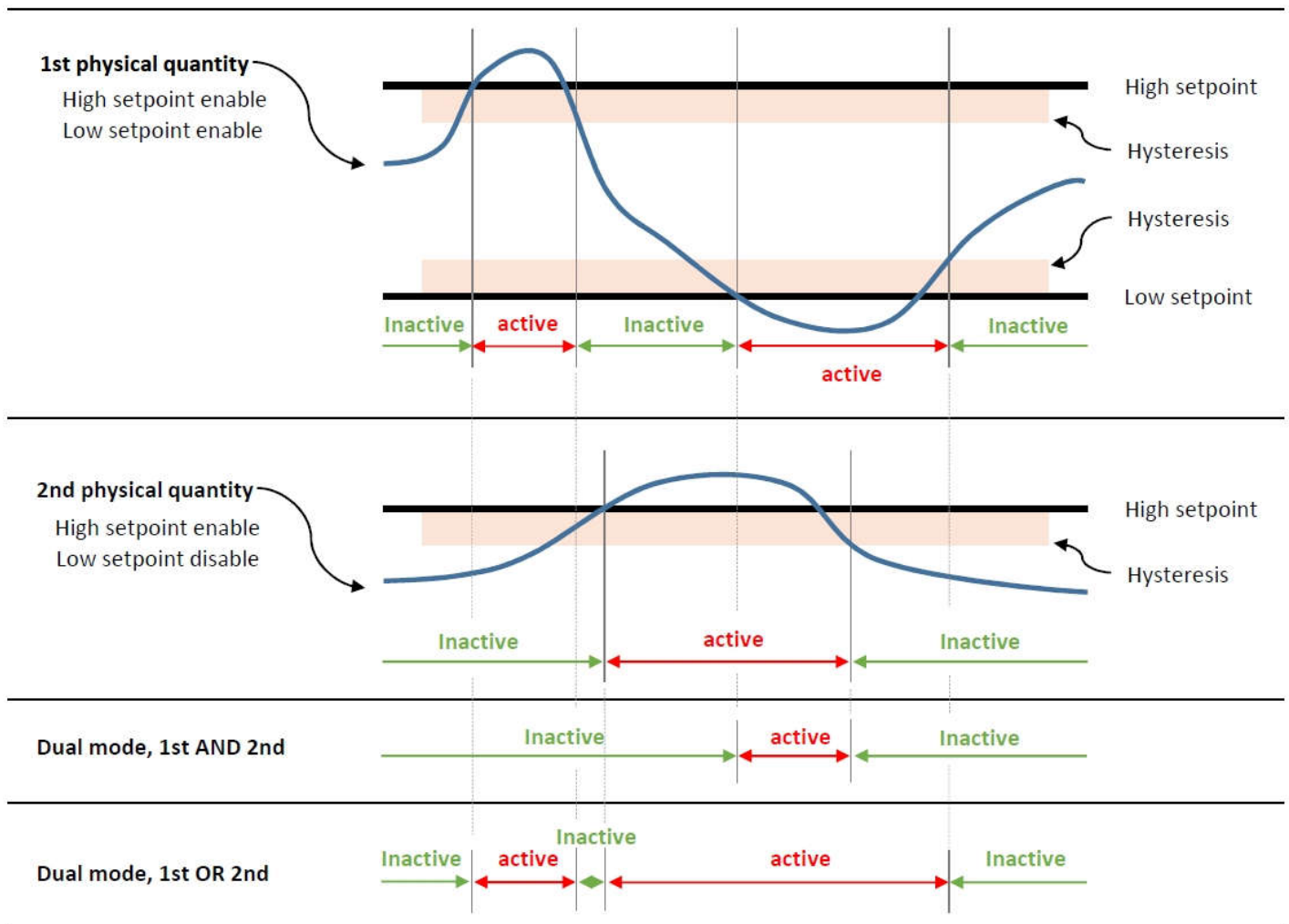
1st / 2nd Setpoint value

- High setpoint, available value -9999 ... 9999, adjusting unit 1
- Low setpoint, available value -9999 ... 9999, adjusting unit 1
- The value of High setpoint must be higher then the value of Low setpoint

1st / 2nd Setpoint enable / disable

- High setpoint
 - enable / disable
- Low setpoint
 - enable / disable

Alarm example





11. Product information About

- Model Name
- Serial Number
- Firmware Version