Icon Electronics

D3
53mm
DIN rail mount

P44
48mmx48mm
panel mount

HUMIDITY CONTROL (HS4 PROBE)

D3-HUM 0/1/2
P44-HUM 0/1/2

EXAMPLE: D3-HUM0 = 0 RELAY

Operating instructions and Guarantee Certificate
www.iconelectronics.co.za

Description:

These devices are designed to interface with 4-wire humidity sensors **Probe (HS4)**.

They offer 0.1% resolution with a typical accuracy of 3%(between 20 and 80%)

The relays may be configured as either control or alarm functions in either heating or cooling applications.

When configured for alarm applications, the latch facility may be used to keep the relay in the fault condition until the latch is removed.

The maximum and minimum humidity are recorded for a period of 24 hours. This is useful when troubleshooting or analizing the overall system's performance.

The parameter settings may be locked and code protected to avoid changes from being made by unauthorized personnel.

The menu may be reduced to allow changes to only the most commonly adjusted parameters. This reduces the risk that one of the mode advanced parameters are accedentally changed.

The adjustable range of the humidity set points may be limited to avoid temperatures from being enetered that may cause damage to the overall system.

HUM0

These devices do NOT incorporate any relays and are used to display the humidity read from the probe(s).

HUM1

These devices incorporate 1 relay. It may be used as either a control or alarm relay for either raising or reducing humidity applications. (please see "relay operation modes" for further details). The relay is controlled by the Set point and hyteresis parameters.

HUM2

These devices incorporate 2 relays. Each relay may be used as either a control or alarm relay for either raising or reducing humidity applications. (please see "relay operation modes" for further details). The relays are configured independantly. (one may be set for control while the other is used as an alarm relay).

Relay Operation modes:

Raising mode:

The relay is energised while the humidity rises to the set point value. When the set-point is reached, the relay de-energizes until the humidity drops below the set-point by the hysteresis amount.

Raising alarm mode:

Similar to heating mode except that the relay is de-energised until the set point is reached. Once energised, the humidity must drop below the set-point by the hysteresis amount before it will de-energise. The latch facility may be used to keep the relay energised until the latch is removed

(even if the humidity has dropped sufficiently)

Reducing mode:

The relay is energised while the humidity drops to the set point value. When the set-point is reached, the relay de-energizes until the humidity rises above the set-point by the hysteresis amount of degrees.

Reducing alarm mode:

Similar to cooling mode except that the relay is de-energised until the set point is reached. Once energised, the humidity must rise above the set-point by the hysteresis amount before it will de-energise. The latch facility may be used to keep the relay energised until the latch is removed (even if the thumidity has increased sufficiently)

Adjustable parameters:

1. <u>Humidity set point "Hu.SP",</u> (default: 50.0)

   The relay is either energised or de-energised (depending on the relay function set in parameter 3) when the probe Humidity reaches this value.

2. <u>Hysteresis value "HYSt",</u> (default: 1)

   Once the Humidity set point has been reached, the Humidity must either rise or fall (Depending on the relay function set in parameter 3) by this amount before the relay is re-energized. .Range 1-20%

3. <u>Relay Function "Hu.Fn"</u>

   Select the desired relay function: RAISE mode, REDUCE mode, RAISE ALARM, REDUCE ALARM, (HUM2 only). Please see notes for further details of these functions.

4. <u>Maximum permissible value for parameter 1 "Hu.Hi"</u> (default: 100.0)

   This is the maximum value obtainable via parameters 1 and 2.

   eg. if this value is set to 45.0, then parameters 1 and 2 cannot be set to values higher than 45 percent. This function may be used to stops unauthorised personnel from adjusting the Humidity setpoint above the limit allowed by the system.

5. <u>Minimum permissible value for parameter 1 "Hu.Lo"</u> (default: 0)

   This is the minimum value obtainable via parameters 1 and 2. eg. if this value is set to 5.0, then parameters 1 and 2 cannot be set to values lower than 45 percent.

6. <u>Offset "Hu.Of"</u> (default: 0.0)

   This value is added (or subtracted if negative) to the current Humidity read from the probe.
   Use this parameter to calibrate the probe.

7. <u>Lowest value read during past 24 hours "24h.L"</u>

   The lowest Humidity read during the past 24 hours is saved in memory. This value may be cleared.

8. <u>Highest value read during past 24 hours "24h.H"</u>

   The highest Humidity read during the past 24 hours is saved in memory. This value may be cleared.

9. <u>Reset "RESt"</u>

   By selecting this setting, the device is reset to the factory defaults. Press "+" and "-" ("▲" and "▼") simultaneously to reset.

Programming Example 1RELAY (HUM1)

To set the Humidity at which relay 1 de-energizes to 30%:

Dual display DEVICE :

Press "↺" to display "°Hu SP".

Use "▼" and "▲" buttons to change the value to "30.0".

Press and hold "↺" for 3 seconds to exit the menu.

Programming Example 2RELAYS (HUM2)

To set the Humidity at which relay 1 de-energizes to 30%:

Dual display DEVICE:

Press "↺" to display "Hu 1" or "Hu 2"

Use "▼" and "▲" buttons to change the value to "30.0".

Press and hold "↺" for 3 seconds to exit the menu.

Notes

1. The display will show "Err 1" if the sensor is either sensor is not connected correctly, or is faulty.

2. To avoid damage to the sensor, ensure that it is connected correctly BEFORE applying power.

3. The latch facility is ONLY active when the relay is configured as either heating or cooling ALARM.

Specifications:

Humidity range:	0 to 100%
Accuracy:	+-3 % (between 20 to 80%)
Input voltage:	+-15% of rated input voltage
Led indication:	Relay 1 and relay 2 status
Probe:	4-wire humidity (HS4)
Probe length:	4m

Menu operation (single display device):

All adjustments are made via the three front mounted buttons.

Press the "MENU" button repeatedly until the desired setting is reached, press "SELECT" to display the current value of the selected parameter, or sub menu (if applicable).

The "+" and "-" buttons are used to change the value.

"ENTER" will return the device to the menu.

The "BACK" button will exit the menu.

Menu operation (dual display device):

Press the menu "↺" button repeatedly until the desired setting is reached.

The "▲" and "▼" buttons are used to change the value.

"↺" will display the next menu item.

To exit the menu hold "↺" button for 3 seconds.

Menu options:

Exit the menu before making the following adjustments.

Lock / unlock parameters:
(default: unlocked)

Press "BACK" ("▼"), **then** "ENTER" ("↺") and hold the 2 buttons until the desired option is displayed.

The display cycles between "Loc" (no changes allowed) & "u.Loc" (parameters may be adjusted)

Full / reduced menu (default: Full)

Press "SELECT"("▲"), **then** "ENTER"("↺") and hold the 2 buttons until the desired option is displayed.

The display cycles between "rEdu" (limited menu) & "Full" (all parameters are accessible)

Access Code: (default: no code)

Once the above options have been set as required, Press "BACK" and "SELECT" ("▼" and "▲") simultaneously until "CODE" is displayed.

Now use the "+" & "-" ("▲" and "▼") to enter a code.

Once a code is entered, access to the options above is not permitted.

To clear the code, re-enter the same code again.

If the code is forgotten. Press and hold "+" & "-" ("▲" and "▼") until "CODE" is displayed while re-applying power to the device.

Please Note (for 1 and 2 relay devices ONLY):

· As a power saving feature, the display dims if settings are not being made.
· Even though the device seems to operate correctly, the relay(s) will not energise if the input voltage is below the operating voltage.

12 Month guarantee:

Our product is guaranteed for a 12 (twelve) month period from date of purchase. This guarantee is valid for defects arising from failure during specified conditions. This guarantee does not cover damage due to abuse, tampering or improper installation. Our company does not accept liability for any consequential damage or loss arising from product malfunction. Should this product prove to be defective, kindly return for inspection or repair.

Relay specifications:

Contact rating: 10A 250 VAC   2500VA
Mechanical life: 30 million operations
Electrical life: 250 000 operations (at maximum load)

For further information, please visit us at: **www.iconelectronics.co.za**

P44- HUM

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | | 2016 | 2017 | 2018 |

1

Black **B** 2

Red **R** 3

White **W** 4

Yellow **Y** 5

R1
6 COM
7 NO

*

R2
8 COM
9 NO
10 NC

11 **L(+)** 12 **N(-)**
SUPPLY

*IF ONLY 1 RELAY
installed terminal 8 = R1 NC

OUTPUT
- [ ] RELAY 1
- [ ] RELAY 2
- [ ] ....

SUPPLY
- [ ] 110V AC
- [ ] 240V AC
- [ ] 400V AC
- [ ] 12V
- [ ] 24V
- [ ] 48V
- [ ] ....
- [ ] AC [ ] DC
- [ ] ISOLATED

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