Tecnología Aplicada
a la Información

Humidity Sensor

TAI8540A

Features:

- Measures Relative Humidity with a +/-2% accuracy
- Rel. Humidity measurement range from 0% to 100%
- Temperature measurement accuracy +/-2°C
- Based on the HIH 3610-A sensor from HONEYWELL
- 1-Wire® DS2438 IC from Maxim/Dallas Semiconductors used as A/D and temperature sensor
- Bypass connection to the 1-Wire® net work
- Available option with Dallas Semic onductors TAG-ID standard for elec tronic identification of function
- Plain connection through RJ11 con nectors
- It doesn't require external power sup- ply, the needed operation power is ob tained from the 1-Wire® data line.
- Pass through 1-Wire® network con nection
- Unique 1-Wire address permits multi ple sensors on the network
- TMEX -Standard compatible

Description:

The TAI-8540 module is based on the HIH-3610-A humidity sensor, manufactured by Honeywell, and uses the DS2438 IC from Dallas Semiconductors as a 1-Wire A/D converter. The DS2438 not only provides the complete front-end for the 1-Wire® section assigning a 64 bit address to each unit, but also is used as a temperature sensor . So this module not only measures the relative humidity, but also senses temperature.

The module can include (TAI8540-A) a DS2505 memory with the TMEX compatible files TAGB.000 , TAGD.000, TAGX.000.

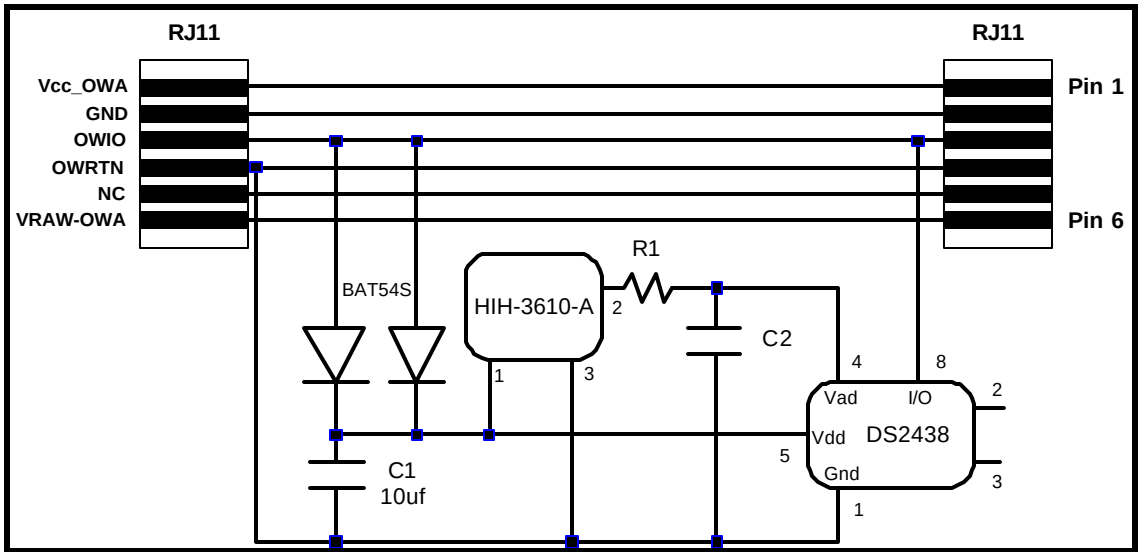
For more information regarding the HIH-3610-A sensor please visit:

www.honeywell.com/sensing

and more information about the DS2438 can be obtained here:

www.dalsemi.com

Schematic:



DS2505 file contents (for TAI8540A-T option):

File TAGB.000

Byte 0-3 Part ID : **SWITC**
Byte 4-7 Serial : **yyyy**
Byte 8-12 Manufacturer : **$ AAG**

Preliminary

Byte 13-16 Mod. Function :**$8540**
Byte 17-19 Interface Type :**$01**
Byte 20-22 Hardware Rev. :**$01**
Byte 23-27 Date Code :**$ddddddd**

File TAGD.000

```
{G: ParseData } [
 {D: Description (23)}TAI8540 1-Wire Humidity
 {D: Manufacturer (3) }AAG
 {D:                  Ma-          nufacturerCode
```

Preliminary

```
(5) }$ AAG
 {D: ClusterNum (4)}xxxxxxxx
 {D: ClusterRev(1)} 1
 {D: Enum (2)} yyyy
 {D: SecondsSince1970 (4) ddddddd
 {G: OWCluster }[
  {G : OWSensor }[
   {D:Description ( 2 )} ON
   {D:OWNetAddress (8)} yyyyyyyxxxxxxxxy
   {D:ChannelMask(1)}3
   {D:ChannelState(1)}2
   {D:AccessMethod (1)} AM_SWITCH_2406
  ]
  {G : OWActuator }[
   {D:Description (3)} OFF
   {D:OWNetAddress (8)} yyyyyyyxxxxxxxxy
   {D:ChannelMask(1)}3
```

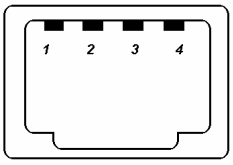
File TAGX.000

```
<?xml version="1.0" encoding="UTF-8"?>
<cluster name="TAI8540 Humidity">
   <sensor addr="###....####" type="Sensor">
                                        <label>Turn
```

Preliminary

```
On</label>
      <max>On</max>
      <min>Off</min>
      <channel>0</channel>
      <init>1</init>
   </sensor>
   <actuator addr="###....####" type="Switch">
      <label>Turn off</label>
      <max>On</max>
      <min>Off</min>
      <channel>1</channel>
```

RJ11 Connectors pinout:



- **Pin #1 NC**
- **Pin #2 1-Wire Data**
- **Pin #3 Gnd**
- **Pin #4 NC**

Specifications:

Parameter	Min	Normal	Max	Notes
Humidity rel (%)		+/-2%		0-100 % RH non-condensing, 25 ° C, 5 VDC supply
Operation Temperature	-10	+25	+50	
Supply voltage (PIN4)	4.8v	5.0v	5.5v	Refered to Pin 1
Data voltage (PIN2)	0	-	5.0v	
A/D Temperature resolution		13 bits		
A/D Humedity resolution		10 bits		
Current consumption			2ma	
Humidity sensor response time 1/e			15 sec	

Ordering information:

- TAI8540A Basic Unit
- TAI8540A-T Unit including DS2505 with TAG-ID and XML files

Important:

This product is designed to be used indoors only.

This product is not designed, intended or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of a product of could create a situation where personal injury or death may occur.

1-Wire® is a trademark of the Dallas Semiconductor . Third-party product and brand names may be trademarks or registered trademarks of their respective owners