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|  <b>TI1182en</b> | <b>Technical Information</b>                                      |  |
| <b>CRC4- Series (H&amp;T)</b>                                                                   | <b>Ceiling Humidity and Temperature Sensor with Active Output</b> |                                                                                    |

The CRC4- Series (H&T) is designed to measure temperature, relative humidity, absolute humidity, enthalpy or dew point in large rooms or areas

Professional design suitable for plant or utility rooms

The Sensor is replaceable

The sensor comes with a 1m connection cable, other lengths available

The sensor outputs are active



|            |                                                                                                                                                                                                                                                                                                                                |
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| <b>Use</b> | <p>Compatible to all common HVAC DDC and Analog Controls systems, with/without Building Automation System</p> <p>Relative humidity, absolute humidity, enthalpy or dew point and temperature measurement in Rooms and Areas</p> <p>Used in all common HVAC applications</p> <p>Used in Commercial and Industrial Buildings</p> |
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|                 |                                                                                                                                                                                                                                                                                                                                          |
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| <b>Features</b> | <p>Sensor Outputs are active</p> <p>Sensor Output 0...10V or 4...20mA</p> <p>Multiple Temperature measuring ranges</p> <p>Field Replaceable sensor</p> <p>High Humidity accuracy</p> <p>Humidity and Temperature Field calibration potentiometer</p> <p>Modern and practical product design</p> <p>Easy to use, install and maintain</p> |
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| <b>Product Range</b> | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th data-bbox="172 1592 301 1783">Order Codes</th> <th data-bbox="301 1592 430 1783">Cable Length</th> <th data-bbox="430 1592 560 1783">Power Supply</th> <th data-bbox="560 1592 689 1783">Temperature Humidity</th> <th data-bbox="689 1592 818 1783">Accuracy Humidity</th> <th data-bbox="818 1592 986 1783">Humidity / Temperature Output</th> <th data-bbox="986 1592 1153 1783">Temp. Ranges</th> <th data-bbox="1153 1592 1329 1783">Measuring Variable</th> <th data-bbox="1329 1592 1544 1783">Measuring Units</th> </tr> </thead> <tbody> <tr> <td data-bbox="172 1783 301 1944">CRC4.AE</td> <td data-bbox="301 1783 430 1944">1m</td> <td data-bbox="430 1783 560 2103" rowspan="3" style="text-align: center;">AC/DC 24V (±10%)</td> <td data-bbox="560 1783 689 2103" rowspan="3" style="text-align: center;">± 0.2K between 0°C...+80°C</td> <td data-bbox="689 1783 818 2103" rowspan="3" style="text-align: center;">± 2%, Full Scale</td> <td data-bbox="818 1783 986 1861" rowspan="2" style="text-align: center;">0...10V*</td> <td data-bbox="986 1783 1153 1861" rowspan="2" style="text-align: center;">-50...50°C</td> <td data-bbox="1153 1783 1329 1861" rowspan="2" style="text-align: center;">rel. humidity*</td> <td data-bbox="1329 1783 1544 1861" rowspan="2" style="text-align: center;">0...100%</td> </tr> <tr> <td data-bbox="172 1861 301 1944"></td> <td data-bbox="301 1861 430 1944"></td> <td data-bbox="818 1861 986 1944" style="text-align: center;">or</td> <td data-bbox="986 1861 1153 1944" style="text-align: center;">0...50°C*</td> <td data-bbox="1153 1861 1329 1944" style="text-align: center;">absolute humidity</td> <td data-bbox="1329 1861 1544 1944" style="text-align: center;">0...50gr/m3</td> </tr> <tr> <td data-bbox="172 1944 301 2103">CRC4.BE</td> <td data-bbox="301 1944 430 2103">2m</td> <td data-bbox="818 1944 986 2022" rowspan="2" style="text-align: center;">4...20mA</td> <td data-bbox="986 1944 1153 2022" rowspan="2" style="text-align: center;">-20...80°C</td> <td data-bbox="1153 1944 1329 2022" rowspan="2" style="text-align: center;">dew point</td> <td data-bbox="1329 1944 1544 2022" rowspan="2" style="text-align: center;">-20...80°C</td> </tr> <tr> <td data-bbox="172 2022 301 2103"></td> <td data-bbox="301 2022 430 2103"></td> <td data-bbox="986 2022 1153 2103" style="text-align: center;">0...100°C</td> <td data-bbox="1153 2022 1329 2103" style="text-align: center;">enthalpy</td> <td data-bbox="1329 2022 1544 2103" style="text-align: center;">0...85kJ/Kg</td> </tr> </tbody> </table> <p style="text-align: center;">* default setting</p> | Order Codes      | Cable Length               | Power Supply      | Temperature Humidity          | Accuracy Humidity | Humidity / Temperature Output | Temp. Ranges    | Measuring Variable | Measuring Units | CRC4.AE           | 1m          | AC/DC 24V (±10%) | ± 0.2K between 0°C...+80°C | ± 2%, Full Scale | 0...10V* | -50...50°C | rel. humidity* | 0...100% |  |  | or | 0...50°C* | absolute humidity | 0...50gr/m3 | CRC4.BE | 2m | 4...20mA | -20...80°C | dew point | -20...80°C |  |  | 0...100°C | enthalpy | 0...85kJ/Kg |
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| Order Codes          | Cable Length                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Power Supply     | Temperature Humidity       | Accuracy Humidity | Humidity / Temperature Output | Temp. Ranges      | Measuring Variable            | Measuring Units |                    |                 |                   |             |                  |                            |                  |          |            |                |          |  |  |    |           |                   |             |         |    |          |            |           |            |  |  |           |          |             |
| CRC4.AE              | 1m                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | AC/DC 24V (±10%) | ± 0.2K between 0°C...+80°C | ± 2%, Full Scale  | 0...10V*                      | -50...50°C        | rel. humidity*                | 0...100%        |                    |                 |                   |             |                  |                            |                  |          |            |                |          |  |  |    |           |                   |             |         |    |          |            |           |            |  |  |           |          |             |
|                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                  |                            |                   |                               |                   |                               |                 | or                 | 0...50°C*       | absolute humidity | 0...50gr/m3 |                  |                            |                  |          |            |                |          |  |  |    |           |                   |             |         |    |          |            |           |            |  |  |           |          |             |
| CRC4.BE              | 2m                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                  |                            |                   | 4...20mA                      | -20...80°C        | dew point                     | -20...80°C      |                    |                 |                   |             |                  |                            |                  |          |            |                |          |  |  |    |           |                   |             |         |    |          |            |           |            |  |  |           |          |             |
|                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0...100°C        | enthalpy                   | 0...85kJ/Kg       |                               |                   |                               |                 |                    |                 |                   |             |                  |                            |                  |          |            |                |          |  |  |    |           |                   |             |         |    |          |            |           |            |  |  |           |          |             |

|                                                          |                                                     |                                  |
|----------------------------------------------------------|-----------------------------------------------------|----------------------------------|
| Sensor Specification                                     | Measured                                            | Temperature & Humidity           |
| Sensor Characteristics H/T                               | Active                                              |                                  |
| Outputs                                                  | 0...10V ; 0...10V or 4...20mA ; 4...20mA            |                                  |
| Temperature OFF-set Potentiometer (R)                    | ± 3k                                                |                                  |
| Humidity OFF-set Potentiometer (R2)                      | ± 5%                                                |                                  |
| Output Load                                              |                                                     |                                  |
| 0...10V                                                  | Min. load 10kΩ @ AC/DC 24V                          |                                  |
| 4...20mA                                                 | Max. load 500Ω @ DC 24V                             |                                  |
| Measuring Current                                        | <1mA                                                |                                  |
| Accuracy                                                 |                                                     |                                  |
| relative humidity                                        | ± 2% within 0...100% r.h.                           |                                  |
| absolute humidity                                        | ± 2% within 0..100% r.h.                            |                                  |
| enthalpy                                                 | ± 2% within 0..100% r.h.                            |                                  |
| dew point                                                | ± 2% within 0..100% r.h.                            |                                  |
| Temperature                                              | see temperature chart, page 3                       |                                  |
| IP- Rating sensor element                                | IP67 to IEC60529                                    |                                  |
| Repeatability (H)                                        | ±0.1°C ; ±0.1% r.h.                                 |                                  |
| Long Term Drift (H)                                      | < 0.04°C / year ; < 0.5% r.h. / year                |                                  |
| Measuring Range (H)                                      | 0...100%                                            |                                  |
| Measuring Range (T) (default)                            | 0°C...50°C                                          |                                  |
| Measuring Ranges (T) (optional, on board)                | -20°C...80°C ; -50°C...+50°C ; 0°C...+100°C         |                                  |
| Electrical Information                                   | Power Supply                                        | AC/DC 24V (±10%)                 |
| Frequency                                                | 50 / 60 Hz at AC 24V                                |                                  |
| Terminal Clamp                                           | Screw terminal, max. 1.5mm <sup>2</sup>             |                                  |
| Power Consumption                                        |                                                     |                                  |
| 0...10V output                                           | ≤ 0.4W / AC 24V; ≤ 0.85VA / DC 24V                  |                                  |
| 4...20mA output                                          | ≤ 0.6W / AC 24V; ≤ 1VA / DC 24V                     |                                  |
| Mechanical Information                                   | Cable Length                                        | 1m or 2m                         |
| Cable Lead Diameter                                      | Ø0.25mm                                             |                                  |
| Cable Diameter                                           | 4.6mm                                               |                                  |
| Sensing Element Position                                 | external, top of the sensor pocket                  |                                  |
| Sensor Housing                                           | Ø30mmx37mm                                          |                                  |
| Sensor / Housing connection                              | M12 screw-on connection                             |                                  |
| Color and Materials                                      | Housing Cover                                       | White ABS, RAL9001 (Cream White) |
| Housing Bottom                                           | White ABS, RAL9001 (Cream White)                    |                                  |
| Lock Screws                                              | US:AISI 304; EU: EN X 6 CrNi 18 10; GER: W.N. 1.301 |                                  |
| Lock Nuts                                                | Brass                                               |                                  |
| Sensor / Housing connection                              | Zink alloy - Nickel plated                          |                                  |
| Cable Gland                                              | White ABS, RAL2002 (Vermilion)                      |                                  |
| Gland Rubber Seal                                        | White TBS, RAL9010 (Pure White)                     |                                  |
| Protection Caps                                          | White ABS, RAL2002 (Vermilion)                      |                                  |
| Sensor Housing                                           | White TBS, RAL9010 (Pure White)                     |                                  |
| Cable                                                    | Black PVC                                           |                                  |
| Environmental Conditions                                 | Operation Temperature                               | 0°C...+50°C                      |
| Operation Humidity                                       | <85 % r.h., no condensation                         |                                  |
| Transport Temperature                                    | -35°C...+70°C                                       |                                  |
| Transport Humidity                                       | < 90% r.h.                                          |                                  |
| Norms and Directives                                     | Storage Humidity                                    | < 85% r.h., no condensation      |
| IP- Rating                                               | IP30 to IEC60529                                    |                                  |
| Safety Class                                             | III to EN 60 730                                    |                                  |
| CE Conformities to                                       | 2004/108/EG Electromagnetic Compatibility EMV       |                                  |
| CE Electromagnetic Compatibility Emitted Interference    | 2000/EN60730-1 Emitted Interference                 |                                  |
| CE Electromagnetic Compatibility Interference resistance | 2000/EN60730-1 Interference Resistance              |                                  |
| RoHS Compatibility                                       | RoHS 3, Directive 2015/863                          |                                  |
| Operation Climatic Condition                             | IEC 60 721-3-3                                      |                                  |
| Operation Mechanical Condition                           | IEC 60 721-3-2 to class2M2                          |                                  |
| Transport to Climatic Condition                          | IEC 60 721-3-2                                      |                                  |
| Transport Mechanical Condition                           | IEC 60 721-3-2 to class2M2                          |                                  |
| Storage Climatic Condition                               | IEC 60 721-3-1                                      |                                  |
| Storage Mechanical Condition                             | IEC 60 721-3-1 to class2M2                          |                                  |
| Accessories                                              | n/a                                                 | n/a                              |
| Shipping & Handling                                      | Minimum Order                                       | 1 box with 1 piece               |
| Packaging                                                | Rigid Cardboards                                    |                                  |
| Order Notes                                              | Order Code                                          | CRC4.AE                          |

All Information and technical data are subject to alteration

**Installation Notes**

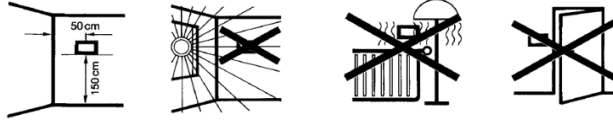


Observe the following general regulation for engineering and implementation:

- All relevant national and heavy power regulations
- Other country specific regulations
- Country-specific regulations
- Local electrical supply authority regulation
- Schematics, cable listings, dispositions, specification and arrangements from the customer or engineering office in charge
- Third party specifications, e.g. general contractors or constructors

Advices

**Mounting Advices**



Under normal environmental conditions we recommend a recalibration interval of 2 year to maintain the indicated accuracy.  
 Refrain from touching the sensitive sensor. Any touch of the same will result in an expiration of the warra  
 At high ambient temperatures and high humidity, or when use the sensor in aggressive gases, an early recalibration or a change of the sensor can become necessary.

Such a recalibration or a probable sensor change may not come under the general warranty

**Disposal Notes**



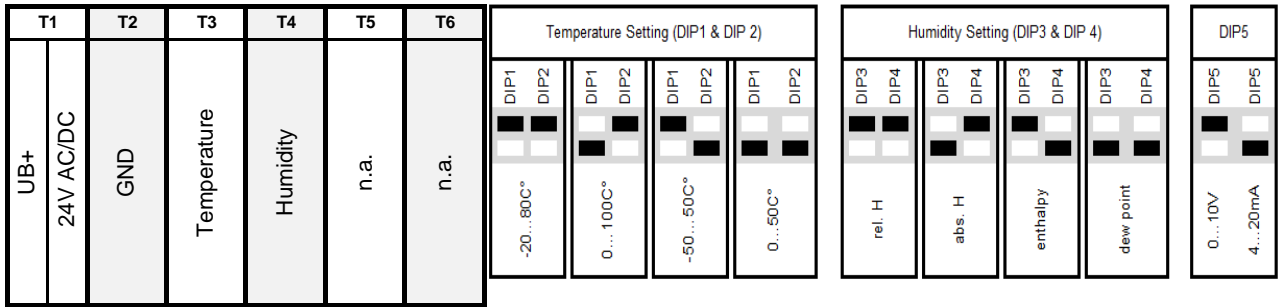
The device is considered an electronic device for disposal in terms of the EUROPEAN DIRECTIVE 2012/19/EU.

The device may not be disposed as domestic garbage.

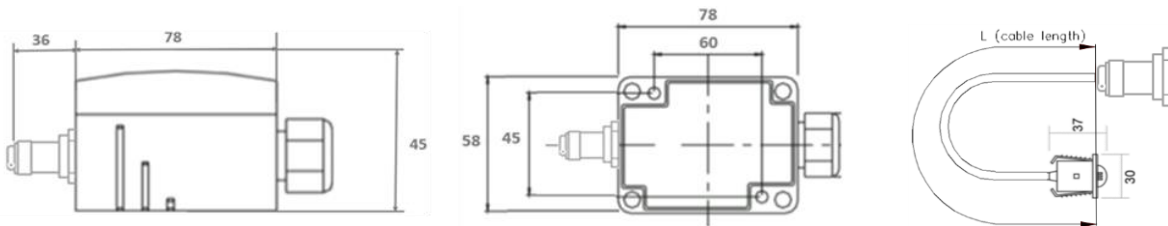
The device must be disposed through channels provided for this purpose.

It is mandatory to comply with local currently applying laws and regulations.

Connections & Settings



Dimensional Drawing / Mounting Instruction



Accuracy Curves

