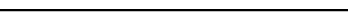


|                                                                               |                                                                                 |                   |                                                                                   |
|-------------------------------------------------------------------------------|---------------------------------------------------------------------------------|-------------------|-----------------------------------------------------------------------------------|
|  | DS1213en                                                                        | <b>Data Sheet</b> |  |
| CDI4-Series (H&T)                                                             | <b>Duct Humidity and Temperature Sensor<br/>with Active and Passive Outputs</b> |                   |                                                                                   |

The CDI4-Series (H&T) is designed to measure humidity and temperature in air ducts of heating, ventilation and air conditioning systems

The sensor operates with low voltage power supply

In accordance with RESET® and WELL Building Standard™

With Operation LED, optional with ePaper display available

The sensor outputs are active, optional with passive Temperature output



|            |                                                                                                        |
|------------|--------------------------------------------------------------------------------------------------------|
| <b>Use</b> | Compatible to all common HVAC DDC and Analog Controls systems, with/without Building Automation System |
|            | Used in all common HVAC applications                                                                   |
|            | Used in Commercial and Industrial Buildings                                                            |

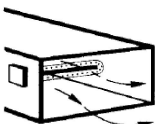
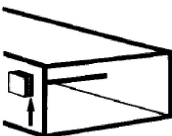
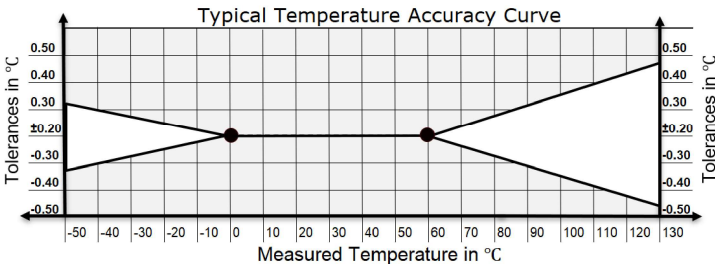
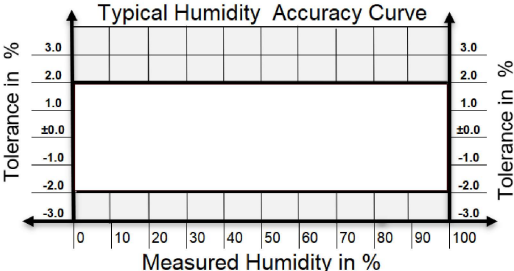
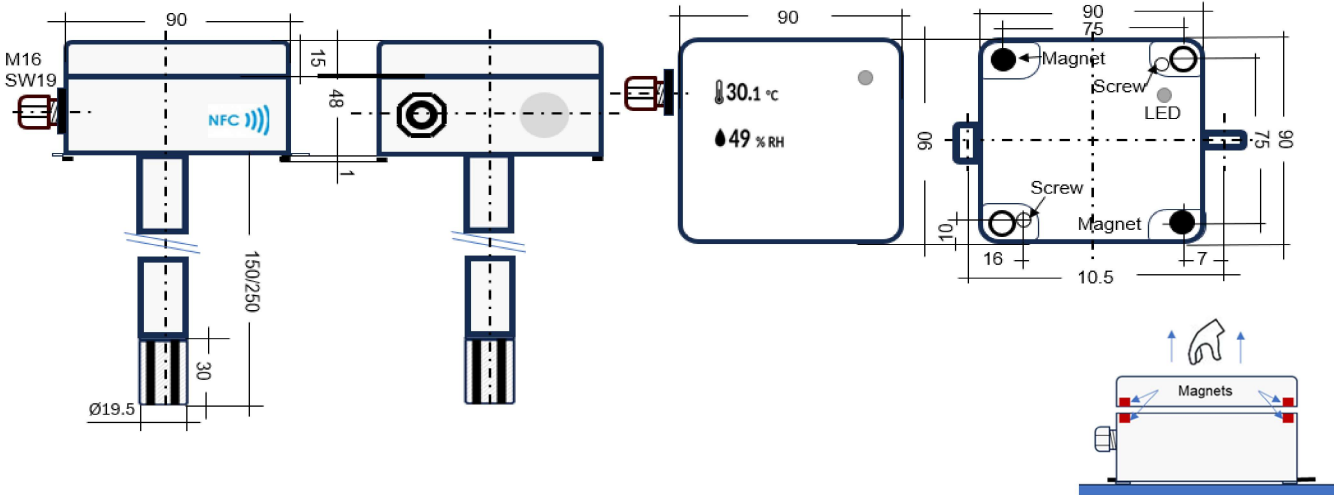
|                      |                                                                                  |
|----------------------|----------------------------------------------------------------------------------|
| <b>Product Range</b> | Sensor outputs 0–10 V or 4–20 mA                                                 |
|                      | Optional with ePaper display available                                           |
|                      | Reading/Parameter settings via NFC technology                                    |
|                      | Selectable Humidity Units (rel. Humidity / abs. Humidity / Dew Point / Enthalpy) |
|                      | Cover/bottom housing connected with magnets and two screws                       |
|                      | Immersion Pockets in Stainless Steel                                             |
|                      | Firmware updates via service connector                                           |
|                      | Easy to use, install and maintain.                                               |

| Order Codes          | General Parameters |                |                    |               |                     | Temperature Active |                                                                                                      | *Temperature Passive |                    | Humidity Parameters |                            |           |                                             |               |
|----------------------|--------------------|----------------|--------------------|---------------|---------------------|--------------------|------------------------------------------------------------------------------------------------------|----------------------|--------------------|---------------------|----------------------------|-----------|---------------------------------------------|---------------|
|                      | Pocket Length      | Active Outputs | Power Supply       | Display / LED |                     | IP Rating          | Range                                                                                                | Accu-racy            | Passive Sensor     | Accu-racy           | Range / Unit               |           | Accu-racy                                   |               |
| CDI4G.FA<br>CDI4G.HA | 150 mm<br>250 mm   | T&H: 0—10 V    | AC/DC 24 V (±10 %) | LED           | Display<br>31×60 mm | IP65               | -20 °C to +80 °C (default)<br>-40 °C to +135 °C via NFC adjustable<br>±0.2 °C between 0 °C to +50 °C |                      | N/A                | N/A                 | rel. humidity<br>(default) | 0~100 %   | selectable via NFC<br><br>± 2 %, Full Scale |               |
| CDI4G.EA<br>CDI4G.GA | 150 mm<br>250 mm   |                |                    |               | N/A                 |                    |                                                                                                      |                      | absolute humidity  | 0 to 50 g/m³        |                            |           |                                             |               |
| CDI4G.EK<br>CDI4G.GK | 150 mm<br>250 mm   |                |                    |               |                     |                    |                                                                                                      |                      |                    |                     |                            |           |                                             |               |
| CDI4G.EM<br>CDI4G.GM | 150 mm<br>250 mm   |                |                    |               | NTC10k              |                    |                                                                                                      |                      | ±0.25 K<br>@ 25 °C |                     |                            |           |                                             |               |
| CDI4G.FD<br>CDI4G.HD | 150 mm<br>250 mm   | T&H: 4-20 mA   |                    |               | Display<br>31×60 mm |                    |                                                                                                      |                      | N/A                | N/A                 | N/A                        | dew point |                                             | -20 to +80 °C |
| CDI4G.ED<br>CDI4G.GD | 150 mm<br>250 mm   |                |                    |               | N/A                 |                    |                                                                                                      |                      |                    | enthalpy            | 0 to 85 kJ/kg              |           |                                             |               |
| CDI4G.EQ<br>CDI4G.GQ | 150 mm<br>250 mm   |                |                    |               |                     |                    |                                                                                                      |                      |                    |                     |                            |           |                                             |               |
| CDI4G.ES<br>CDI4G.GS | 150 mm<br>250 mm   |                |                    |               |                     |                    |                                                                                                      |                      |                    |                     |                            |           |                                             |               |

\*Other passive elements are available. Contact your Sales Manager for more information

|                       |                                 |                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                   |
|-----------------------|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sensor Specification  | <b>Sensor Specification</b>     | Measured<br>Sensor Characteristics<br>Sensor Output (s)<br>Output Load<br>0–10 V output<br>4–20 mA output                                                                                                                                                                                                                                                    | Humidity and Temperature<br>Active, optional passive Temperature<br>0–10 V or 4–20 mA<br><br>Min. load 5 kΩ @ AC/DC 24 V<br>Max. load 700 Ω @ DC 24 V                                                                                                                                             |
|                       | <b>Temperature (active)</b>     | Accuracy<br>Response time<br>Long Term Drift<br>Default Measuring Range<br>Optional Measuring Range                                                                                                                                                                                                                                                          | ± 0.2 °C between 0 °C to +50 °C<br>t <sub>63</sub> = 2 s<br><0.03 °C per year<br>–20 °C to +80 °C<br>Free selectable via NFC –40 °C to +135 °C                                                                                                                                                    |
|                       | <b>Temperature (passive)</b>    | Accuracy, PT sensors<br>Accuracy, NTC sensors                                                                                                                                                                                                                                                                                                                | ±0.15 K @ 0 °C DIN EN 60751, class A<br>±0.25 K @ 25 °C                                                                                                                                                                                                                                           |
|                       | <b>Humidity</b>                 | Accuracy<br>Repeatability<br>Long Term Drift<br>Measuring Value (default)<br>Optional Measuring Value                                                                                                                                                                                                                                                        | Typically ±2 % RH<br>Average 0.15% RH<br><0.25 % RH per year<br>Relative Humidity, 0 % to 100 %<br>Absolute Humidity, 0 g/m³ to 50 g/m³<br>Dew Point, –20 °C to +80 °C<br>Enthalpy, 0 kJ/kg to 85kJ/kg                                                                                            |
|                       |                                 |                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                   |
| Technical Information | <b>Electrical Information</b>   | Power Supply<br>Frequency<br>Terminal Clamp<br>Power Consumption<br>0–10 V output<br>4–20 mA output                                                                                                                                                                                                                                                          | AC/DC 24 V (±10 %)<br>50/60 Hz at AC 24 V<br>Screw terminal, max. 1.5 mm²<br><br>≤1 W<br>≤1 W                                                                                                                                                                                                     |
|                       | <b>Mechanical Information</b>   | Cable Entry<br>PIN Bar<br>Display<br>Immersion Pocket                                                                                                                                                                                                                                                                                                        | M16 / SW19<br>Bootloader for software updates<br>ePaper 31 mm × 60 mm<br>Ø19.5 mm × 150 mm/250 mm                                                                                                                                                                                                 |
|                       | <b>Colour and Materials</b>     | Housing Cover<br>Housing Bottom<br>Sensor Pipe<br>Flammability Standard                                                                                                                                                                                                                                                                                      | ABS, white / transparent (display)<br>ABS, white<br>ABS, white with SS304 cover<br>UL 94 class HB; IEC 60707; ISO 9770                                                                                                                                                                            |
|                       | <b>Environmental Conditions</b> | Operation Temperature<br>Operation Humidity<br>Transport Temperature<br>Transport Humidity<br>Storage Temperature<br>Storage Humidity                                                                                                                                                                                                                        | –25 °C to +70 °C<br>100 % RH, with condensation<br>–35 °C to +70 °C<br><90 % RH<br>–10 °C to +70 °C<br><85 % RH, no condensation                                                                                                                                                                  |
|                       | <b>Norms and Directives</b>     | IP-Rating<br>Product Safety<br>Product Standard                                                                                                                                                                                                                                                                                                              | IP65 to IEC60529<br>Safety class III, in accordance. with EN IEC 60730-1<br>Automatic electrical controls for household and similar use<br>in accordance with EN IEC 60730-1:2022                                                                                                                 |
|                       |                                 | CE marking in accordance with Directive<br>EMC Emissions, in accordance with<br>EMC Immunity, in accordance with<br>RoHS Compliance, in accordance with<br>Operation Climatic Condition<br>Operation Mechanical Condition<br>Transport to Climatic Condition<br>Transport Mechanical Condition<br>Storage Climatic Condition<br>Storage Mechanical Condition | 2014/30/EU Electromagnetic Compatibility (EMC)<br>EN IEC 60730-1:2022<br>EN IEC 60730-1:2022<br>Directive 2011/65/EU, as amended by (EU) 2015/863<br>IEC 60 721-3-3<br>IEC 60 721-3-2 to class2M2<br>IEC 60 721-3-2<br>IEC 60 721-3-2 to class2M2<br>IEC 60 721-3-1<br>IEC 60 721-3-1 to class2M2 |
|                       |                                 |                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                   |
|                       |                                 |                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                   |
|                       |                                 |                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                   |
|                       |                                 |                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                   |
| Miscellaneous         | <b>Accessories</b>              | N/A                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                   |
|                       | <b>Shipping &amp; Handling</b>  | Minimum Order<br>Packaging                                                                                                                                                                                                                                                                                                                                   | 1 box with 1 piece<br>Rigid cardboards packaging                                                                                                                                                                                                                                                  |
|                       | <b>Order Notes</b>              | Order Code                                                                                                                                                                                                                                                                                                                                                   | See product range, page 1, e.g. CDI4G.ED                                                                                                                                                                                                                                                          |

All Information and technical data are subject to alteration

| Advices                        | <div>Installation Notes</div> <div><div></div><div><p>Observe the following general regulation for engineering and installation:</p><p>All relevant national and local electrical installation codes</p><p>Other country-specific regulations</p><p>Comply with all local safety regulations, schematics, cable listings, dispositions, specifications, and arrangements from the engineering office in charge</p><p>Third-party specifications, e.g., general contractors' or constructors' notes</p></div></div>   |     |     |     |            |                         |    |    |             |          |     |     |     |            |                         |  |  |  |  |  |  |                         |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----|-----|------------|-------------------------|----|----|-------------|----------|-----|-----|-----|------------|-------------------------|--|--|--|--|--|--|-------------------------|
|                                | <div>Mounting Advices</div> <div><div></div><div></div></div>                                                                                                                                                                                                   |     |     |     |            |                         |    |    |             |          |     |     |     |            |                         |  |  |  |  |  |  |                         |
|                                | <div>Disposal Notes</div> <div><div></div><div><p>The device is considered an electronic device for disposal in terms of the European Directive 2012/19/EU</p><p>The device may not be disposed as domestic garbage</p><p>The device must be disposed through channels provided for this purpose</p><p>It is mandatory to comply with local currently applying laws and regulations</p></div></div>                                                                                                                  |     |     |     |            |                         |    |    |             |          |     |     |     |            |                         |  |  |  |  |  |  |                         |
|                                | <div>NFC Setting</div> <div><div></div><div><p>All devices marked with the NFC Logo can be parameterized via the Gruner AP NFC APP</p><p>The NFC APP is available on the Gruner AP Website, <a href="https://www.grunerasiapacific.com/">https://www.grunerasiapacific.com/</a></p><p>Hold your NFC-capable Android phone to the NFC Logo, the installed APP will start automatically</p><p><b>Commissioning Note:</b> The sensor will reach its specified accuracy after 1 hour of being powered up</p></div></div> |     |     |     |            |                         |    |    |             |          |     |     |     |            |                         |  |  |  |  |  |  |                         |
| Accuracy Curves                | <div><div>Typical Temperature Accuracy Curve</div><div>Typical Humidity Accuracy Curve</div></div>                                                                                                                                                                                                                                                                                                                           |     |     |     |            |                         |    |    |             |          |     |     |     |            |                         |  |  |  |  |  |  |                         |
| Dimensional Drawing / Mounting | <div></div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |     |     |     |            |                         |    |    |             |          |     |     |     |            |                         |  |  |  |  |  |  |                         |
| Connections & Settings         | <div><div>Terminal Connections</div><table><tr><th>S1</th><th>S2</th><th>S3</th><th>S4</th><th>S5</th><th>S6</th><th>S7</th></tr><tr><td>Temperature</td><td>Humidity</td><td>N/A</td><td>GND</td><td>UB+</td><td>24 V AC/DC</td><td>Temperature Passive (-)</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td>Temperature Passive (+)</td></tr></table></div>                                                                                                                                                                                                                  | S1  | S2  | S3  | S4         | S5                      | S6 | S7 | Temperature | Humidity | N/A | GND | UB+ | 24 V AC/DC | Temperature Passive (-) |  |  |  |  |  |  | Temperature Passive (+) |
| S1                             | S2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | S3  | S4  | S5  | S6         | S7                      |    |    |             |          |     |     |     |            |                         |  |  |  |  |  |  |                         |
| Temperature                    | Humidity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | N/A | GND | UB+ | 24 V AC/DC | Temperature Passive (-) |    |    |             |          |     |     |     |            |                         |  |  |  |  |  |  |                         |
|                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |     |     |     |            | Temperature Passive (+) |    |    |             |          |     |     |     |            |                         |  |  |  |  |  |  |                         |