



DS2220en

Data SheetGDI1-Series (CO₂)**Duct Air Quality (CO₂) Sensor
with Active Outputs**

The GDI1-Series (CO₂) is designed to measure air quality (CO₂) 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

Use	Compatible to all common HVAC DDC and Analog Controls systems, with/without Building Automation System																																																														
	Used in all common HVAC applications																																																														
Features	Used in Commercial and Industrial Buildings																																																														
	Sensor outputs 0–10 V or 4–20 mA Optional with ePaper display available Reading/parameter settings via NFC technology Cover/button housing connected with magnets and 2 screws Immersion Pockes in Stainless Steel Firmware updates via service connector Easy to use, install and maintain.																																																														
Product Range	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Order Codes</th> <th colspan="6">General Parameters</th> <th rowspan="2">Air Quality (CO₂)</th> </tr> <tr> <th>Display</th> <th>Active Outputs</th> <th>Immersion Lengh</th> <th>LED</th> <th>Power Supply</th> <th>IP Rating</th> <th>Parameters</th> </tr> </thead> <tbody> <tr> <td>GDI1G.EA</td> <td>ePaper 31 mm x 60 mm</td> <td rowspan="2">0–10 V</td> <td>150 mm</td> <td rowspan="2">LED</td> <td rowspan="2">AC/DC 24 V (±10 %)</td> <td rowspan="2">IP65</td> <td rowspan="8"> Accuracy ±(50 ppm +3 % of reading) Measuring Range 0 to 2000 ppm Repeatability ± 10 ppm Response time t₆₃ = 60 s </td> </tr> <tr> <td>GDI1G.CA</td> <td>N/A</td> <td>250 mm</td> </tr> <tr> <td>GDI1G.VA</td> <td>ePaper 31 mm x 60 mm</td> <td rowspan="2">4–20 mA</td> <td>150 mm</td> <td rowspan="2">LED</td> <td rowspan="2">AC/DC 24 V (±10 %)</td> <td rowspan="2">IP65</td> </tr> <tr> <td>GDI1G.UA</td> <td>N/A</td> <td>250 mm</td> </tr> <tr> <td>GDI1G.ED</td> <td>ePaper 31 mm x 60 mm</td> <td rowspan="2">0–10 V</td> <td>150 mm</td> <td rowspan="2">LED</td> <td rowspan="2">AC/DC 24 V (±10 %)</td> <td rowspan="2">IP65</td> </tr> <tr> <td>GDI1G.CD</td> <td>N/A</td> <td>250 mm</td> </tr> <tr> <td>GDI1G.VD</td> <td>ePaper 31 mm x 60 mm</td> <td rowspan="2">4–20 mA</td> <td>150 mm</td> <td rowspan="2">LED</td> <td rowspan="2">AC/DC 24 V (±10 %)</td> <td rowspan="2">IP65</td> </tr> <tr> <td>GDI1G.UD</td> <td>N/A</td> <td>250 mm</td> </tr> </tbody> </table>							Order Codes	General Parameters						Air Quality (CO ₂)	Display	Active Outputs	Immersion Lengh	LED	Power Supply	IP Rating	Parameters	GDI1G.EA	ePaper 31 mm x 60 mm	0–10 V	150 mm	LED	AC/DC 24 V (±10 %)	IP65	Accuracy ±(50 ppm +3 % of reading) Measuring Range 0 to 2000 ppm Repeatability ± 10 ppm Response time t ₆₃ = 60 s	GDI1G.CA	N/A	250 mm	GDI1G.VA	ePaper 31 mm x 60 mm	4–20 mA	150 mm	LED	AC/DC 24 V (±10 %)	IP65	GDI1G.UA	N/A	250 mm	GDI1G.ED	ePaper 31 mm x 60 mm	0–10 V	150 mm	LED	AC/DC 24 V (±10 %)	IP65	GDI1G.CD	N/A	250 mm	GDI1G.VD	ePaper 31 mm x 60 mm	4–20 mA	150 mm	LED	AC/DC 24 V (±10 %)	IP65	GDI1G.UD	N/A	250 mm
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Sensor Specification	Sensor Specification	Measured	Air Quality (CO ₂)
	Sensor Characteristics	Active	
	Sensor Output (s)	0–10 V or 4–20 mA	
	Output Load		
	0–10 V output	Min. load 5 kΩ @ AC/DC 24 V	
	4–20 mA output	Max. load 700 Ω @ DC 24 V	
	Air Quality (CO₂)	Accuracy	±(50 ppm +3 % of reading)
	Repeatability	±10 ppm	
	Response Time	t ₆₃ = 60 s	
	Measuring Range	0 ppm to 2000 ppm	
Technical Information	Electrical Information	Power Supply	AC/DC 24 V (±10 %)
	Frequency	50/60 Hz at AC 24 V	
	Terminal Clamp	Screw terminal, max. 1.5 mm ²	
	Power Consumption		
	0–10 V output	≤1 W	
	4–20 mA output	≤1 W	
	Mechanical Information	Service Connector	Bootloader for software updates
	Display	ePaper 31 mm × 60 mm	
	Immersion Pocket	Ø19.5 mm × 150 mm/250 mm	
	Materials and Colours	Housing Cover	ABS, white
Environmental Conditions	Housing Bottom	ABS, white	
	Sensor Pipe	ABS, white	
	Flammability Standard	UL 94 class HB; IEC 60707; ISO 9770	
	Operation Temperature	0 °C to +50 °C	
	Operation Humidity	<85 % RH, no condensation	
	Transport Temperature	-35 °C to +70 °C	
	Transport Humidity	<90 % RH	
	Storage Humidity	<85 % RH, no condensation	
	Norms and Directives	IP-Rating	IP65 to IEC60529
	REACH Regulation	Regulation (EC) No. 1907/2006	
Miscellaneous	Product Safety	Safety class III, in accord. with EN IEC 60730-1	
	Product Standard	Automatic electrical controls for household and similar use in accordance with EN IEC 60730-1:2022	
	CE marking in accordance with Directive	2014/30/EU Electromagnetic Compatibility (EMC)	
	EMC Emissions, in accordance with	EN IEC 60730-1:2022	
	EMC Immunity, in accordance with	EN IEC 60730-1:2022	
	RoHS Compliance, in accordance with	Directive 2011/65/EU, as amended by (EU) 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	
Accessories	Storage Climatic Condition	IEC 60 721-3-1	
	Storage Mechanical Condition	IEC 60 721-3-1 to class2M2	
Shipping & Handling	N/A		
	Minimum Order	1 box with 1 piece	
	Packaging	Rigid cardboard packaging	
Order Notes	Order Code	See product range, e.g. GDI1G.CA	

Installation Notes

Observe the following general regulation for engineering and installation:



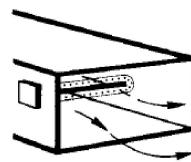
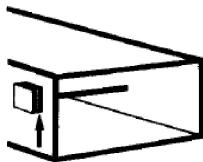
All relevant national and local electrical installation codes

Other country-specific regulations

Comply with all local safety regulations, schematics, cable listings, dispositions, specifications, and arrangements from the engineering office in charge

Third-party specifications, e.g., general contractors' or constructors' notes

Mounting Advices



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

NFC Setting



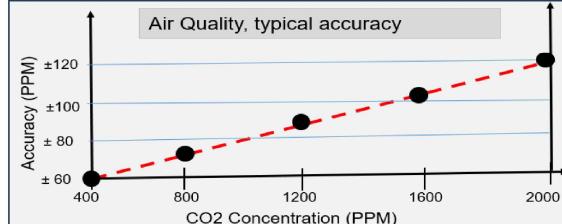
All devices marked with the NFC Logo can be parameterized via the Gruner AP NFC APP

The NFC APP is available on the Gruner AP Website, <https://www.grunerasiapacific.com/>

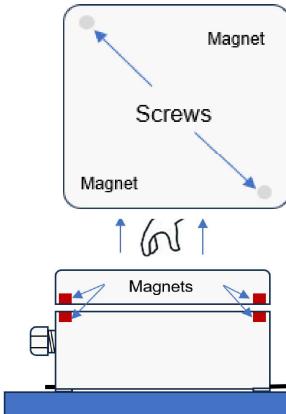
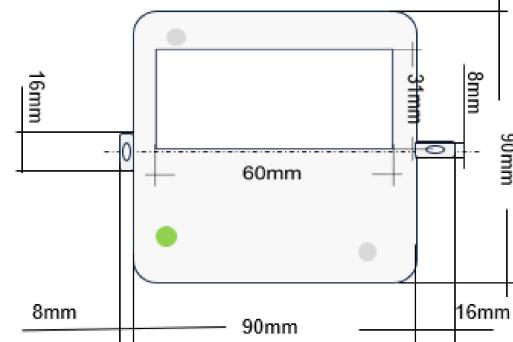
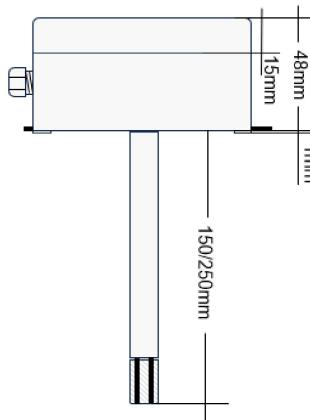
Hold your NFC-capable Android phone to the NFC Logo, the installed APP will start automatically

Commissioning Note: The sensor will reach its specified accuracy after 1 hour of being powered up

Accuracy Curves



Dimensional Drawing / Mounting



Connections & Settings

Terminal Connections

S1	S2	S3	S4	S5	S6	S7
N/A	N/A	Air Quality (CO ₂)	GND	UB+	24 V AC/DC	N/A