DS2012en	Data Sheet	GRUNER
GRW1-Series (VOC)	Room Air Quality (VOC) Sensor with Active Output	

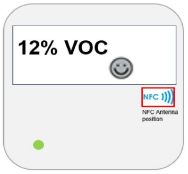
The GRW1-Series (VOC) is designed to measure air quality (VOC) in rooms or areas

The sensor operates with low voltage power supply

In accordance with RESET® and WELL Building Standard™

Sensor with Air Quality LED and optional with ePaper display

The VOC sensor output are active, optional with passive temperature output



Use

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

Features

Sensor with active output, optional with passive temperature output

Sensor output 0–10 V or 4–20 mA, optional with passive temperature output

Optional with ePaper display available

Reading/Parameter settings via NFC technology

Firmware updates via external USB-C

Easy to use, install and maintain

Product Range

Order Codes	General Parameters					Air Quality (VOC)				Temperature Parameters, passive*	
	Active Output	LED	Power Supply	Display	IP Rating	Parameters				Passive Outputs	Accuracy Passive
GRW1G.IA	0–10 V	Air Quality LED	AC/DC 24 V (±10 %)	ePaper display 31×60 mm	IP20	Device-to-Device variation ±15 Index Points (3.3 %)	Measuring Range 0 to 500 Index Points (0 % to 100 %)	Repeatability ±5 Index Points (1 %)	Response time t63 10 s	N/A	
GRW1G.EA				N/A						N/A	
GRW1G.EO										PT1000	±0.15 K @ 0 °C DIN EN 60751, class A
GRW1G.EP										NTC10k	±0.25 K @ 25 °C
GRW1G.ID	4–20 mA			ePaper display 31×60 mm						N/A	
GRW1G.ED				N/A						N/A	
GRW1G.EJ										PT1000	±0.15 K @ 0 °C DIN EN 60751, class A
GRW1G.EM										NTC10k	±0.25 K @ 25 °C

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

Sensor Specification	**Sensor Specification**	Measured	Air Quality (VOC)
		Sensor Characteristics	Active, optional passive Temperature
		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
	Temperature (passive)	Accuracy, PT sensors	±0.15 K @ 0 °C DIN EN 60751, class A
		Accuracy, NTC sensors	±0.25 K @ 25 °C
	Air Quality (VOC)	Device-to-Device variation	±15 Index Points (3.3 %)
		Repeatability	±5 Index Points (1 %)
		Response Time	t_{63} = 10 s
		Measuring Range	0 to 500 Index Points (0 % to 100 %)
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 mm²
		Power Consumption	
		0–10 V output	≤1 W
		USB-C	Bootloader for software updates
		Display	ePaper 31 mm × 60 mm
	Materials and Colours	Housing Cover	ABS, white / transparent (display)
		Housing Bottom	ABS, white
		Flammability Standard	UL 94 class HB; IEC 60707; ISO 9770
	Environmental Conditions	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	IP20 to IEC60529
		REACH Regulation	Regulation (EC) No. 1907/2006
		Product Safety	Safety class III, in accordance. 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
		Storage Climatic Condition	IEC 60 721-3-1
		Storage Mechanical Condition	IEC 60 721-3-1 to class2M2
Miscellaneous	**Accessories**	N/A	
	Shipping & Handling	Minimum Order	1 box with 1 piece
		Packaging	Rigid cardboard packaging
	Order Notes	Order Code	See product range, e.g. GRW1G.EA

Advices

Installation Notes

Observe the following general regulation for engineering and installation:

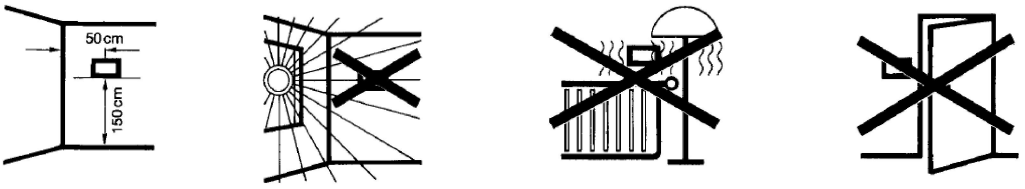
All relevant national and local electrical installation codes

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

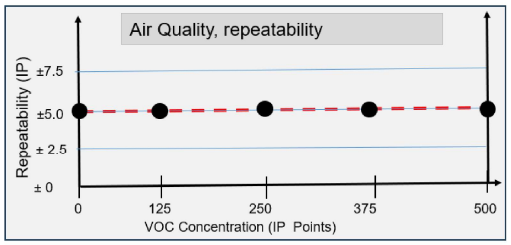
It is mandatory to comply with local currently applying laws and regulations

NFC Setting

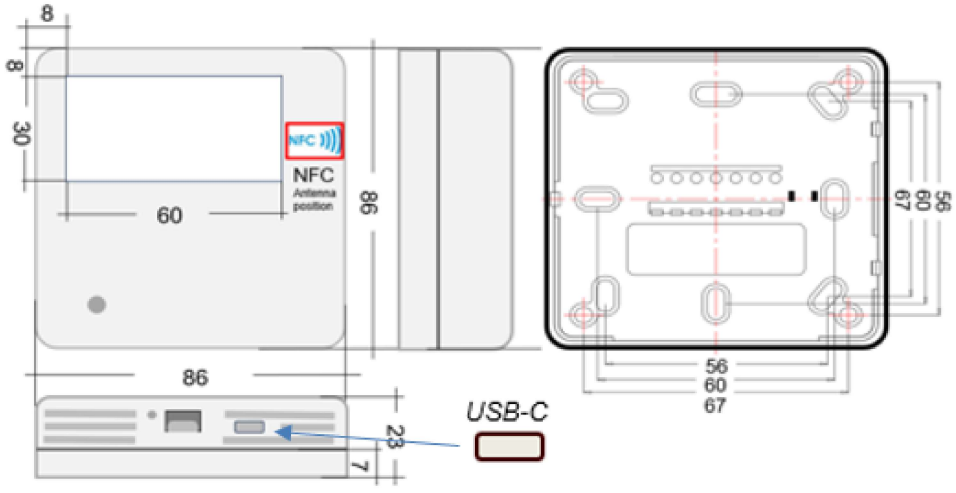
All devices marked with the NFC Logo can be parameterized via the Gruner AP NFC APP

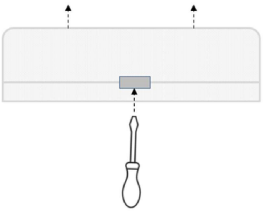
The NFC APP is available on the Gruner AP Website, https://www.grunerasiapacific.com/

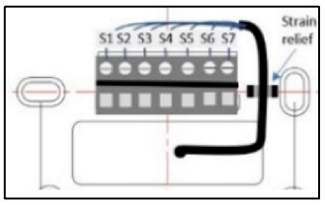
Accuracy Curves



Dimensional Drawing / Mounting







Connections & Settings

Terminal Connections							
S1		S2	S3	S4	S5	S6	S7
UB+	24 V AC/DC	GND	Air Quality (VOC)	N/A	N/A	Temperature Passive (-)	Temperature Passive (+)