

 DS2229en	Data Sheet	
COW5-Series (VOC&H&T)	Outdoor Air Quality (VOC), Humidity and Temperature Sensor with Active Outputs	

The COW5-Series (VOC&H&T) is designed to measure air quality (VOC), humidity and temperature in outdoor areas

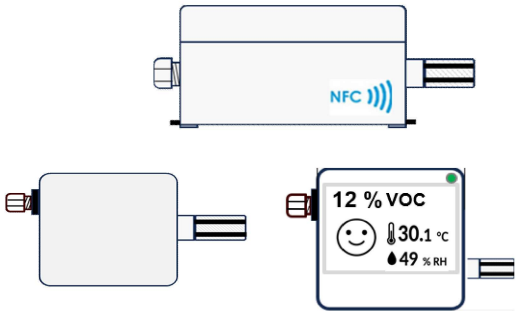
of heating, ventilation and air conditioning systems

In accordance with RESET® and WELL Building Standard™

Reading/parameter settings via NFC technology

With operation LED, optional with ePaper display available

The sensor outputs are active

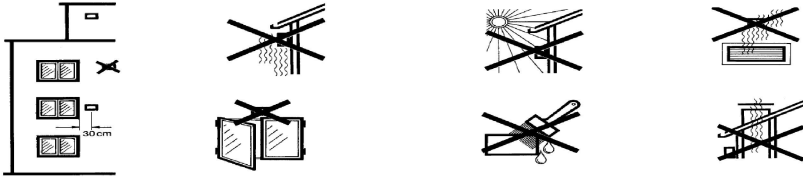
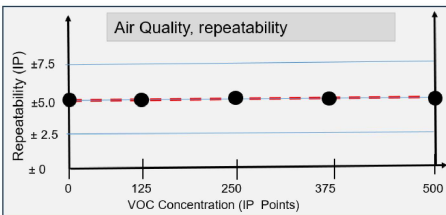
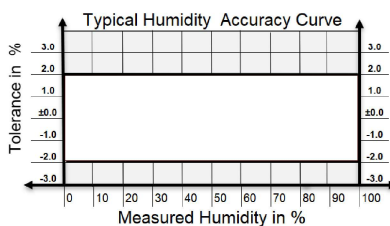
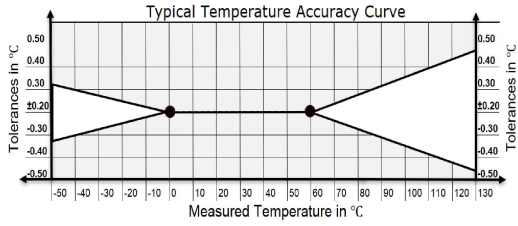
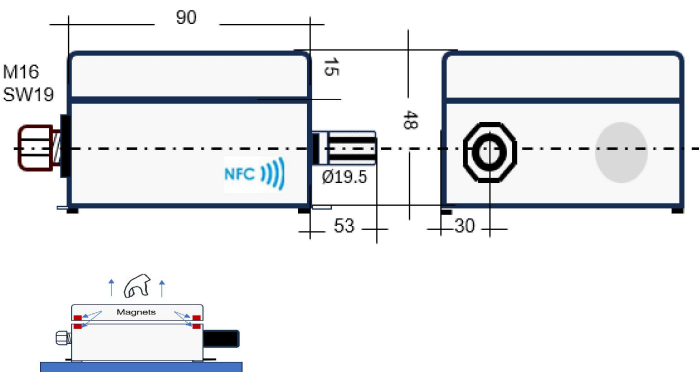
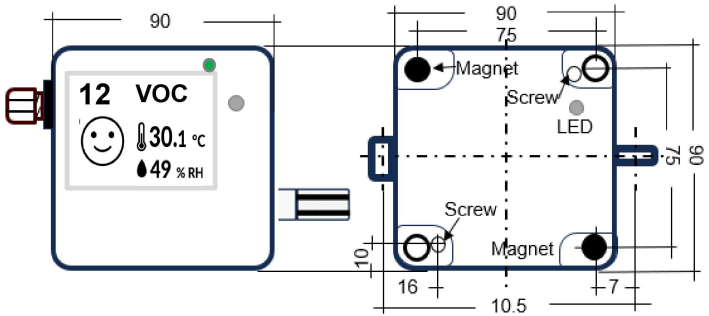


Use	Compatible to all common HVAC DDC and Analog Controls systems, with/without Building Automation System
	Used in all common HVAC applications
	Used in Commercial and Industrial Buildings

	Sensor outputs 0–10 V or 4–20 mA Optional with ePaper display available Reading/parameter settings via NFC technology Selectable Humidity Units: Relative Humidity / Absolute Humidity / Dew Point / Enthalpy Cover/bottom housing connected with magnets and 2 screws Immersion Pockets in Stainless Steel Firmware updates via service connector Easy to use, install and maintain
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Product Range	Order Codes	General Parameters					Temperature Parameters		Humidity Parameters		Air Quality (VOC) Parameters	
		Immersion Length	Display	LED	Power Supply	Active Outputs	IP Rating	Measuring Range	Accuracy	Measuring Range	Accuracy	Measuring Range and Accuracy
	COW5G.DB	50 mm	N/A	LED	AC/DC 24 V (±10 %)	0–10 V	IP65	0 °C to +50 °C (default) –40 °C to +135 °C via NFC adjustable ±0.2 °C between 0 °C to +50 °C	rel. humidity (default)	0 to 100 %	selectable via NFC ±2%, Full scale	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 t ₆₃ = 10 s
	COW5G.DF								absolute humidity	0 to 50 g/m³		
	COW5G.EB								dew point	–20 °C to +80 °C		
	COW5G.EF								enthalpy	0 to 85 kJ/kg		

Sensor Specification	Sensor Specification	Measured Sensor Characteristics Sensor Output (s)	Air Quality (VOC) / Humidity / Temperature Active 0–10V or 4–20 mA
	Output Load	0–10 V output 4–20 mA output	Min. load 5 kΩ @ AC/DC 24 V Max. load 700 Ω @ DC 24 V
	Temperature (active)	Accuracy Response time Long Term Drift Default Measuring Range Optional Measuring Range	±0.2 °C between 0 to +50 °C t ₆₃ = 2 s <0.03 °C per year 0 °C to +50 °C Free selectable via NFC –40 °C +135 °C
	Humidity	Accuracy Repeatability Long Term Drift Measuring Value (default) Optional Measuring Value	Typically ±2 % RH Average 0.15 % RH <0.25 % RH per year Relative Humidity: 0 to 100 % Absolute humidity: 0 to 50 g/m³ Dew Point: –20 °C to +80 °C Enthalpy: 0 to 85 kJ/kg
	Air Quality (VOC)	Device-to-Device variation Repeatability Response Time Measuring Range	±15 Index Points (3.3 %) ± 5 Index Points (1 %) t ₆₃ = 10 s 0 to 500 Index Points (0 to 100 %)
Technical Information	Electrical Information	Power Supply Frequency Terminal Clamp Power Consumption 0–10 V output 4–20 mA output	AC/DC 24 V (±10 %) 50/60 Hz at AC 24 V Screw terminal, max. 1.5 mm² ≤1 W ≤1 W
	Mechanical Information	Cable Entry PIN Bar Display Immersion Pocket	M16 / SW19 Bootloader for software updates ePaper 31 mm x 60 mm Ø19.5 mm x 50 mm
	Materials and Colours	Housing Cover Housing Bottom Sensor Pipe Flammability Standard	ABS, white / transparent (display) ABS, white ABS, white with SS304 cover UL 94 class HB; IEC 60707; ISO 9770
	Environmental Conditions	Operation Temperature Operation Humidity Transport Temperature Transport Humidity Storage Humidity	–25°C to +70°C 100 % RH, with condensation –35°C to +70°C <90 % RH <85 % RH, no condensation
	Norms and Directives	IP-Rating REACH Regulation Product Safety Product Standard CE marking in accordance with Directive EMC Emissions, in accordance with EMC Immunity, in accordance with RoHS Compliance, in accordance with Operation Climatic Condition Operation Mechanical Condition Transport to Climatic Condition Transport Mechanical Condition Storage Climatic Condition Storage Mechanical Condition	IP65 to IEC60529 Regulation (EC) No. 1907/2006 Safety class III, in accordance with EN IEC 60730-1 Automatic electrical controls for household and similar use in accordance with EN IEC 60730-1:2022 2014/30/EU Electromagnetic Compatibility (EMC) EN IEC 60730-1:2022 EN IEC 60730-1:2022 Directive 2011/65/EU, as amended by (EU) 2015/863 IEC 60 721-3-3 IEC 60 721-3-2 to class2M2 IEC 60 721-3-2 IEC 60 721-3-2 to class2M2 IEC 60 721-3-1 IEC 60 721-3-1 to class2M2
Miscellaneous	Accessories	N/A	
	Shipping & Handling	Minimum Order Packaging	1 box with 1 piece Rigid cardboard packaging
	Order Notes	Order Code	See product range, page 1, e.g. COW5G.DB

	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																					
Advices	Mounting Advices  																					
	Disposal Notes  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 <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>Air Quality (VOC)</td><td>GND</td><td>UB+</td><td>24 V AC/DC</td><td>N/A</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td>N/A</td><td>N/A</td></tr></table>	S1	S2	S3	S4	S5	S6	S7	Temperature	Humidity	Air Quality (VOC)	GND	UB+	24 V AC/DC	N/A						N/A	N/A
S1	S2	S3	S4	S5	S6	S7																
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