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DATA SHEET

RTX

Produal

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RTX - Room transmitter



RTX transmitters are very versatile room transmitters that can be equipped with several measurements. All transmitters are equipped with temperature measurement. The following measurement options are also available:

- Humidity measurement (-RH models)
- CO_2 concentration measurement (-CO2 models)
- VOC (Volatile Organic Compounds) measurement (-VOC models)
- Occupancy detection (-PIR models)

The transmitters offer easy installation and adjustment, several different model options and outputs that can be configured separately for each measurement.

The built-in P/PI controller can be used to control, for example, heating, cooling or VAV applications. The control output can be controlled either according to a one measurement value or according to the maximum selection of all values. You can select the measurements that are used for the maximum selection control.

The transmitters are also available with Modbus RTU or BACnet MS/TP communication via the RS-485 connection.

You can commission devices using the MyProdual smartphone application and the MyTool Connect dongle. You can also configure some basic settings via bus in -MOD and -BAC models.

Technical specifications

Property	Value
Supply	24 Vac (22…26 V) / 24 Vdc (22…39 V), < 3.2 VA
Temperature measurement	
Range	0…50 °C
Accuracy (2σ)	±0.3 °C (at 20…25 °C) **Note:** To achieve this accuracy, eliminate all the error factors that can affect the measurement. See the user guide for more information about the correct installation.
Accuracy (1σ), -VOC and -R models	±0.5 °C (at 25 °C)
Time constant	Adjustable (> 1 min)
CO_2 measurement (-CO2 models)	
Range	0…5000 ppm

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Property	Value
Accuracy (15...35 °C / 0...80 %rH)	With ABC calibration: typ. (2σ) ±40 ppm +2 % from reading, max. (3σ) ±50 ppm +2 % from reading **Note:** The accuracy is achieved after the self-calibration procedure has been completed three times (three weeks).
Humidity measurement (-RH models)	
Range	0…100 %rH
Accuracy (30...75 %rH)	Typ. (2σ) ±2 %rH at 20...25 °C, max. (3σ) ±3 %rH
VOC measurement (-VOC models)	
Range	• CO_2 equivalent: 400...2000 ppm • TVOC (ppb): 0...65000 ppb • TVOC (µg/m³): 0...32767 µg/m³ (conversion from ppb to µg/m³ is calculated using isobutylene's molecular weight) • IAQ index: 1...5 (UBA rating)
Accuracy (25 °C / 50 %rH)	Typ. <12 % from reading, max. <18 % **Note:** The accuracy is achieved after the device has been powered for 24 hours. Sensor uses a start-up algorithm, which allows the output signals to be used after 1 hour of operation. The device executes the start-up algorithm during the first time the device's supply voltage is connected.
Occupancy detection (-PIR models)	
Sensor	PIR
Area	Up to 5 m with angle of ±35°
Multifunctional input	Digital / resistance / 0...10 Vdc / NTC 10 / PT 1000 / universal temperature sensor
Controller	
Controller type	P/PI
Control functions	Heating and cooling according to temperature, humidification and dehumidification according to relative humidity (-RH models), and ventilation according to CO_2 (-CO2 models) or VOC (-VOC models) level
Outputs	
Multifunctional outputs	
Range	0...10 V*, 2 mA (freely scalable within this range) or digital (e.g. 0/10 Vdc)
Accuracy	±0.1 % from full scale
Relay output (-R models)	Change-over, 24 Vac/dc, 1 A res.
Communication	
Modbus (-MOD models)	
Protocol	Modbus RTU
Interface	RS-485
Bus speed	9600*/14400/19200/38400/56000/57600/76800/115200 bit/s
Data bits	8

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Property	Value
Parity	none*/odd/even
Stop bits	1* or 2
Unit load	1/8 UL
BACnet (-BAC models)	
Protocol	BACnet MS/TP
Interface	RS-485
Bus speed	9600*/14400/19200/38400/57600/76800/115200 bit/s
Data bits	8
Parity	none*/odd/even
Stop bits	1* or 2
Unit load	1/8 UL
Wiring terminals	
Type	Tilted screw terminals
Wire	0.2...2.5 mm^2, stripping length 5 mm
Tightening torque	0.4 Nm
Commissioning tool	MyTool Connect dongle with MyProdual application GET IT ON Google Play Available on the App Store
Appliance class (IEC 60664-1)	III
Operating conditions	
Ambient temperature	0...60 °C
Ambient humidity	0...95 %rH (non-condensing)
Storage conditions	
Temperature	10...35 °C
Humidity	20...60 %rH (non-condensing)
Housing	
Protection class	IP30
Materials	ABS plastic
Mounting	On the wall surface or on a flush mounting box (60 mm hole distance)
Dimensions (w x h x d)	97 x 97 x 27 mm (-PIR models: 97 x 97 x 29 mm
Warranty	5 years
CE UKCA	Refer to the EU Declaration of Conformity or the UK Declaration of Conformity for compliance information. You can find the declarations on this product's page at www.produal.com.
	* factory setting

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Wiring

WARNING: Device wiring and commissioning can only be carried out by qualified professionals. Always make the device wirings in de-energised electricity network.

WARNING: External power sources and power wiring must be protected with a fuse or circuit breaker. Rating depends on the overall system load, but the maximum rating for the external circuit breaker is 16 A (limited by internal structure of the product).

WARNING: The minimum power rating for the external power source must be 170 VA / 170 W to ensure proper operation of the internal fusing of the product in case of a failure condition. Otherwise, the overall system power consumption shall be less than 15 W also in the failure condition.

WARNING: This product is appliance class III product according to IEC 60664-1. The product may only be connected to SELV (separated extra low voltage) electricity network.

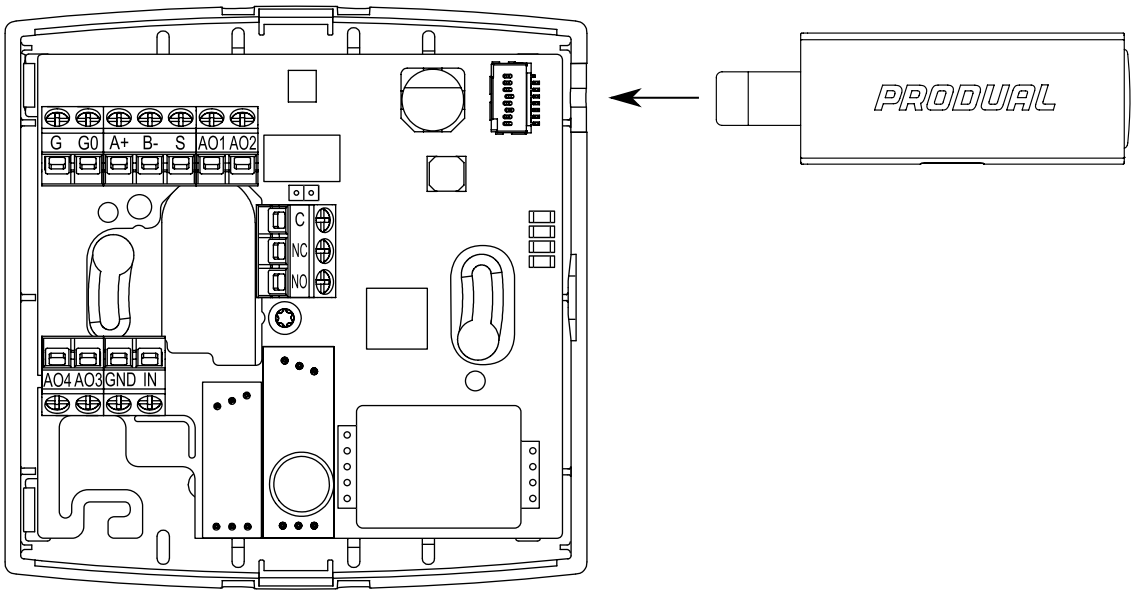
WARNING: The relay port is not protected internally against overload. The wiring of the relay port must be either protected with an external fuse with maximum current rating of 1 A slow blow or the power consumption of the connected external circuitry must be inherently limited to less than 15 W in both normal operation and failure condition.

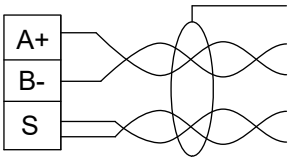
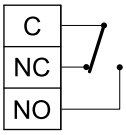
WARNING: The relay port may be connected only to SELV (separated extra low voltage) circuitry.

Important: This product has no capability to detect an abnormal condition of output ports. External supervising (automated/human) may be needed depending on the application where this product is used.

CAUTION: The product may only be connected to overvoltage category I, II or III electricity network according to IEC 60664-1.

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G	Supply, 24 Vac/dc, < 1 VA	
G0	0 V	
A+ *B-* *S*		Modbus RTU, RS-485 (-MOD models). BACnet MS/TP, RS-485 (-BAC models). **Note:** Connector *S* can only be used for chaining the cable shield pair.
AO1	Voltage output 1, 0...10 Vdc, < 2 mA (freely scalable within this range).	
AO2	Voltage output 2, 0...10 Vdc, < 2 mA (freely scalable within this range).	
C *NC* *NO*		Relay output, 24 Vac, 1 A res. (-R models).
AO4	Voltage output 4, 0...10 Vdc, < 2 mA (freely scalable within this range).	
AO3	Voltage output 3, 0...10 Vdc, < 2 mA (freely scalable within this range).	
GND	Ground.	
IN	Input, digital / resistance / 0...10 Vdc / NTC 10 / PT 1000 / universal temperature sensor.	

The nominal tightening torque for wire terminal screws is 0.4 Nm.

Important: Do not use excessive force when you tighten the wiring terminal screws.

CAUTION: Ensure that all covers are closed before you connect the supply voltage to the product. Do not remove the covers when the supply voltage is connected.

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Ordering information

			Type	0	1	2	3	4	5	6
0	Room transmitter			5301						0
1	Device type	Room transmitter with temperature measurement	RTX		1					
		Room transmitter with temperature and CO_2 measurement	RTX-CO2		2					
2	Body colour	White				W				
		Black	B			B				
3	User interface	No user interface					0			
		Indicator light	-L				L			
4	Additional measurements	No additional measurements						0		
		Relative humidity	-RH					H		
		VOC	-VOC					V		
		Occupancy detection	-PIR					P		
		Relative humidity and occupancy detection	-RH-PIR					6		
		Relative humidity, VOC and occupancy detection	-RH-VOC-PIR					7		
		Relative humidity and VOC	-RH-VOC					8		
		VOC and occupancy detection	-VOC-PIR					9		
5	Additional functions	No additional functions							0	
		Modbus RTU	-MOD						M	
		BACnet MS/TP	-BAC						B	
		Relay output	-R						R	
		Modbus RTU and relay output	-MOD-R						1	
		BACnet MS/TP and relay output	-BAC-R						2	

Dimensions

All dimensions are in millimeters (mm).

