

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)
- CO₂ 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.

The transmitters are also available with Modbus RTU communication via the RS-485 connection.

The device commissioning is done by using MyProDual® smart phone application and MyTool Connect commissioning tool. Some of the basic settings can be also configured via bus in -MOD models.




Technical specifications

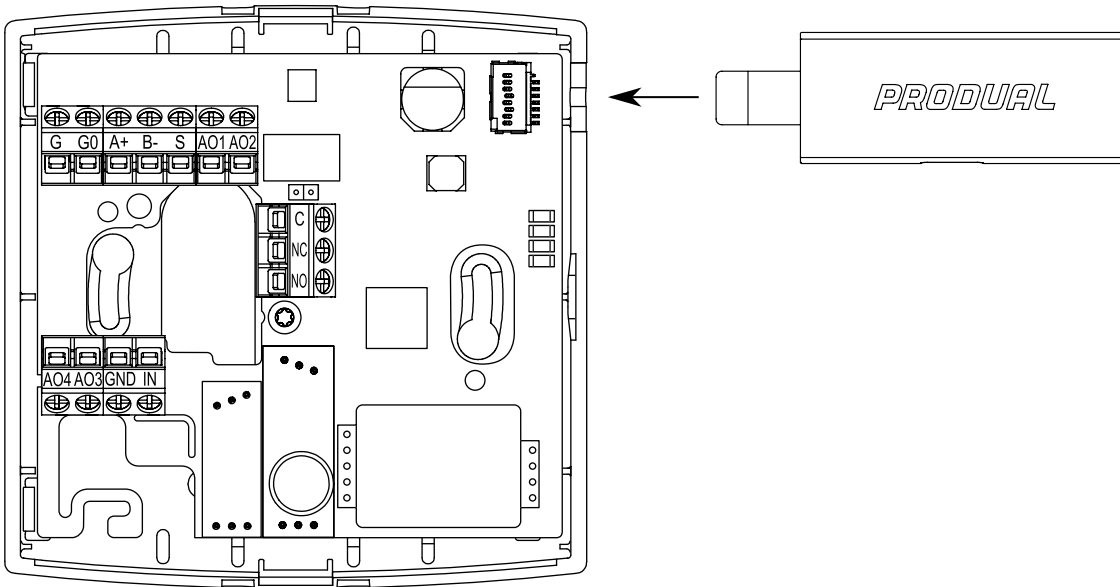
Property	Value	CE UK CA
Supply	24 Vac (22...26 V) / 24 Vdc (22...39 V), < 3.2 VA	
Temperature measurement		
Range	0...50 °C	
Accuracy (2σ)	±0.3 °C (at 20...25 °C)	
	 Note: To achieve this accuracy, the installation quality must be good. The device estimates the installation quality continuously.	
Accuracy (2σ), -R models	±0.5 °C (at 25 °C)	
Time constant	Adjustable (> 1 min)	
CO ₂ measurement (-CO ₂ models)		
Range	0...5000 ppm	
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).	

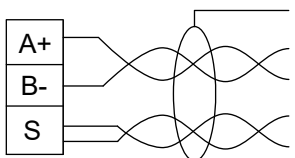

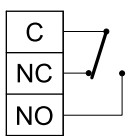
Property	Value	CE UK CA PA
Humidity measurement (-RH models)		
Range	0...100 %rH	
Accuracy (30...75 %rH)	Typ. (2σ) ±2 %rH at 20...25 °C, max. (3σ) ±3 %rH	
VOC measurement (-VOC models)		
Range	<ul style="list-style-type: none"> CO₂ equivalent: 400...2000 ppm TVOC (ppm): 0...30.0 ppm IAQ index: 1...5 (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°	
Voltage outputs		
Range	0...10 V*, 2 mA (freely scalable within this range)	
Accuracy	±0.1 % from full scale	
Relay output (-R models)	Change-over, 24 Vac/dc, 1 A res.	
Input	Digital / resistance / 0...10 Vdc / NTC 10 / PT 1000 / universal temperature sensor	
Communication (-MOD models)		
Bus speed	9600*/14400/19200/38400/56000/57600/76800/115200 bit/s	
Data bits	8	
Parity	none*/odd/even	
Stop bits	1* or 2	
Unit load	1/8 UL	
Commissioning tool	MyTool Connect with MyProidual®	 
Appliance class (IEC 60664-1)	III	
Operating conditions		
Temperature	0...50 °C	
Humidity	0...95 %rH (non-condensing)	
Wiring terminals		
Type	Tilted screw terminals	
Suitable wire	0.2...2.5 mm ² , stripping length 5 mm	
Tightening torque	0.4 Nm	
Housing		
Protection class	IP30	
Materials	ABS plastic	
Mounting	On the wall surface or on a flush mounting box (60 mm hole distance)	

Property	Value	CE UK CPA
Dimensions (w x h x d)	97 x 97 x 27 mm (-PIR models: 97 x 97 x 29 mm)	
	* factory setting	


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



G	Supply, 24 Vac/dc, < 1 VA	
G0	0 V	
A+		Modbus RTU, RS-485 (-MOD models).  Note: Connector S can only be used for chaining the cable shield pair.
B-		
S		
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		Relay output, 24 Vac, 1 A res. (-R models).
NC		
NO		
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 wire terminal screw tightening torque is 0.4 Nm.

-  **Important:** Do not use excessive force when tightening the wiring terminal screws.



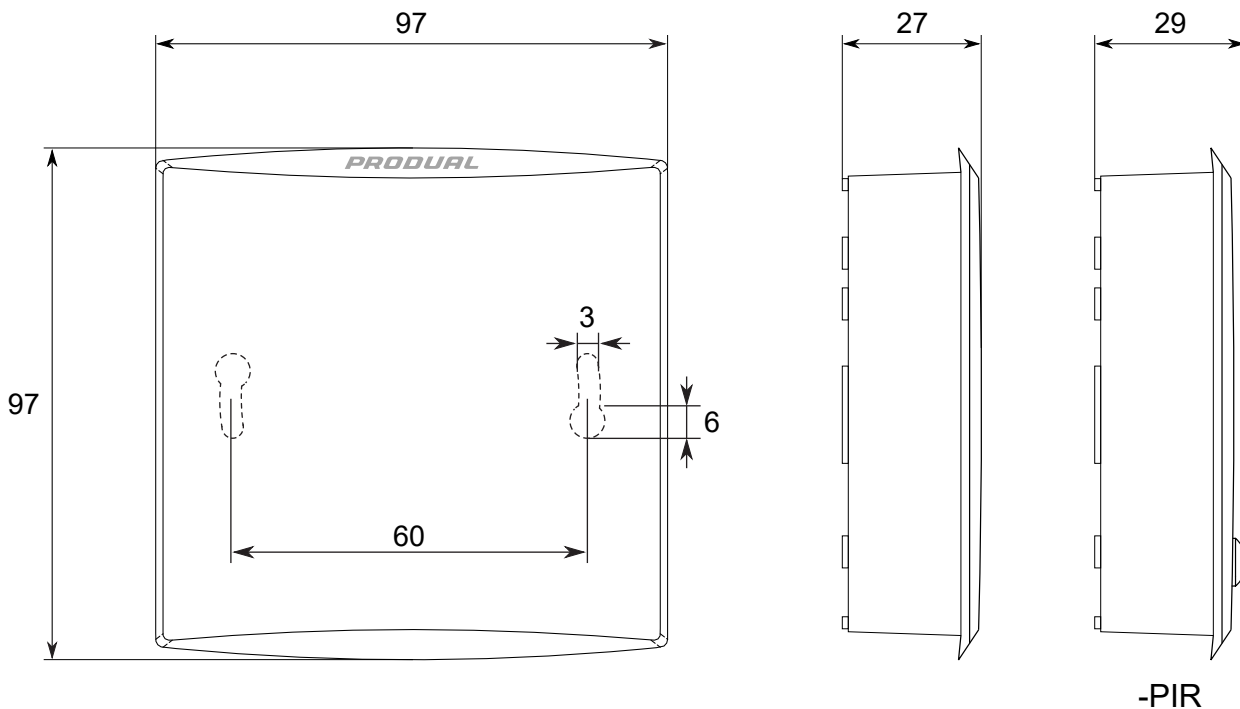
CAUTION: Ensure that all covers are closed before connecting supply voltage to the product. Don't remove the covers when the supply voltage is connected.

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-CO ₂	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	
		Relay output	-R					R	
		Modbus RTU and relay output	-MOD-R					1	

Dimensions

All dimensions are in millimeters (mm).



Supported directives, regulations and standards

All RTX products support the following EU directives, UK regulations and standards.

EU directives

Standard	Description
2014/30/EU	Electromagnetic Compatibility (EMC).
2014/35/EU	Low Voltage Directive (LVD).
2011/65/EU	Restriction of Hazardous Substances (RoHS2) Directive.
(EU) 2015/863	Commission Delegated Directive, amending Annex II to Directive 2011/65/EU.
2001/95/EC	General product safety.
2012/19/EU	Waste electrical and electronic equipment (WEEE).

UK regulations

Standard	Description
S.I. 2016 No. 1091	Electromagnetic compatibility regulations
S.I. 2016 No. 1101	The electrical equipment (safety) regulations
S.I. 2012 No. 3032	The restriction of the use of certain hazardous substances in electrical and electronic equipment regulations
S.I. 2013 No. 3113	The waste electrical and electronic equipment regulations
S.I. 2005 No. 1803	The general product safety regulations

Standards

Standard	Description
EN 63044-1:2017 + A1:2021	Home and building electronic systems (HBES) and building automation and control systems (BACS) - Part 1: General requirements
EN IEC 63044-3:2018	Home and building electronic systems (HBES) and building automation and control systems (BACS) - Part 3: Electrical safety requirements
IEC 60730-1:2022 ed6.0 (2022-09)	Automatic electrical controls - Part 1: General requirements.
EN IEC 63044-5-1:2019	Home and building electronic systems (HBES) and building automation and control systems (BACS) - Part 5-1: EMC requirements, conditions and test set-up
EN IEC 63044-5-2:2019	Home and building electronic systems (HBES) and building automation and control systems (BACS) - Part 5-2: EMC requirements for HBES/BACS used in residential, commercial and light-industrial environments
EN IEC 61000-6-1:2019	Electromagnetic compatibility (EMC) - Part 6-1: Generic standards. Immunity standard for residential, commercial and light-industrial environments
EN 61000-6-3:2021	Electromagnetic compatibility (EMC) - Part 6-3: Generic standards - Emission standard for residential, commercial and light-industrial environments.
EN IEC 61000-4-2:2010	Electromagnetic compatibility (EMC). Testing and measuring techniques - Electrostatic discharge immunity test.
EN IEC 61000-4-3:2020	Electromagnetic compatibility (EMC). Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test.
EN 61000-4-4:2012	Electromagnetic compatibility (EMC). Testing and measurement techniques - Electrical fast transient/burst immunity test.
EN 61000-4-5:2014/AMD1:2017	Electromagnetic compatibility (EMC). Testing and measurement techniques - Surge immunity test.
EN 61000-4-6:2014	Electromagnetic compatibility (EMC). Testing and measurement techniques. Immunity to conducted disturbances, induced by radio-frequency fields.
CISPR 16-2-3:2016+AMD1:2019 ed4.1	Specification for radio disturbance and immunity measuring apparatus and methods - Part 2-3: Methods of measurement of disturbances and immunity - Radiated disturbance measurements

Standard	Description
CISPR 16-2-1:2014+AMD1:2017	Specification for radio disturbance and immunity measuring apparatus and methods - Part 2-1: Methods of measurement of disturbances and immunity - Conducted disturbance measurements
CISPR 32:2015+AMD1:2019	Electromagnetic compatibility of multimedia equipment - Emission requirements