



# RDCZ

## Residential fan speed controller

The RDCZ series are residential HVAC controllers used to control AC fans, voltage controllable motors, lighting or other applications. They feature a wide supply voltage range 110–230 VAC / 50–60 Hz and a variable control output signal between an adjustable minimum and maximum level. The controller can work in 2 modes. In Automatic mode it is a demand-based controller with adjustable setpoint that can be connected to a broad range of Sentera sensors. In Manual mode, the RDCZ works as a full-featured potentiometer. The settings are easily adjustable either via the 3-button interface equipped with a 7-segment LED display, via our 3SModbus software application or via the Sensistant configurator.

### Key features

- User-friendly menu using a 3-digit, 7-segment display with 3-button keyboard interface
- Extended menu via 3SModbus software application or Sensistant configurator
- Adjustable minimum and maximum output values
- Suitable for inset or surface mounting
- Phase controlled output
- Selectable minimum and maximum output value as a percentage of the supply voltage
- Kick start or soft start mode
- Selectable start-up duration time
- 2 operating modes: Manual or Automatic (in combination with a sensor)
- Adjustable setpoint for temperature, relative humidity, CO<sub>2</sub>, air quality, differential pressure
- Setpoint for PI control or direct control with fixed hysteresis
- Display can be toggled between measured value and output value
- User can manually override the output value for a fixed time
- Compatible with all Sentera sensors with Modbus RTU communication
- Stepless output or output in 2–10 steps
- Adjustable start output value or start output step
- Display can be toggled between output value and step
- Modbus RTU (RS485) communication for integration with BMS

Automatic mode features

Manual mode features



### Article codes

	Supply voltage, Us	Enclosure
RDCZ9-15-WH	110–230 VAC ±10 % / 50–60 Hz	White
RDCZ9-15-BK		Black (anthracite)

### Area of use

- Manual control for HVAC applications
- Demand based control for HVAC applications for improved comfort and energy saving
- For indoor use only

### Standards

- Low Voltage Directive 2014/35/EC
- EMC Directive 2014/30/EC: EN 61000-6-2: 2005/AC:2005, EN 61000-6-3:2007/A1:2011/AC:2012, EN 61326-2-3:2013
- WEEE 2012/19/EC
- RoHs Directive 2011/65/EC



### Modbus registers



The Sensistant Modbus configurator allows you to easily monitor and/or configure Modbus parameters.



The parameters of the unit can be monitored / configured through the 3SModbus software platform. You can download it from the following link:  
<https://www.sentera.eu/en/3SMCenter>

For more information about the Modbus registers, please refer to the product Modbus Register Map.

### Technical specifications

Inrush current	Max. 15 A (110 VAC) Max. 25 A (240 VAC)	
No-load (stand-by) power	110 VAC / 60 Hz < 0,9 W 230 VAC / 50 Hz < 2,3 W	
Minimum load	100 mA	
Maximum load	Imax: 1,5 A	
Regulated output	30–100 % Us	
Minimum output voltage, Umin	30–65 % Us	
Maximum output voltage, Umax	75–100 % Us	
Start-up value	30–100 % Us	
Start-up duration	2–10 seconds	
Protection standard	IP44/ IP54 (according to EN 60529)	
Enclosure	external: plastic ASA	
	internal: polyamide (IEC 60335)	
Ambient conditions	Temperature	-10–40 °C
	Rel. humidity	5–80 % rH (non-condensing)

## RDCZ Residential fan speed controller

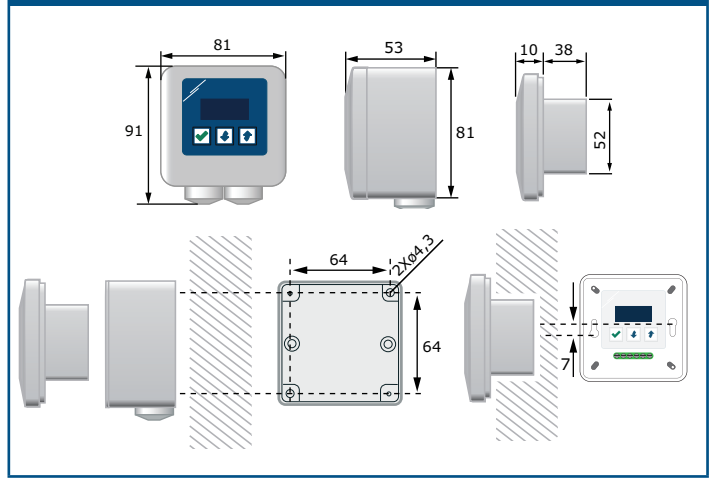


### Wiring and connections

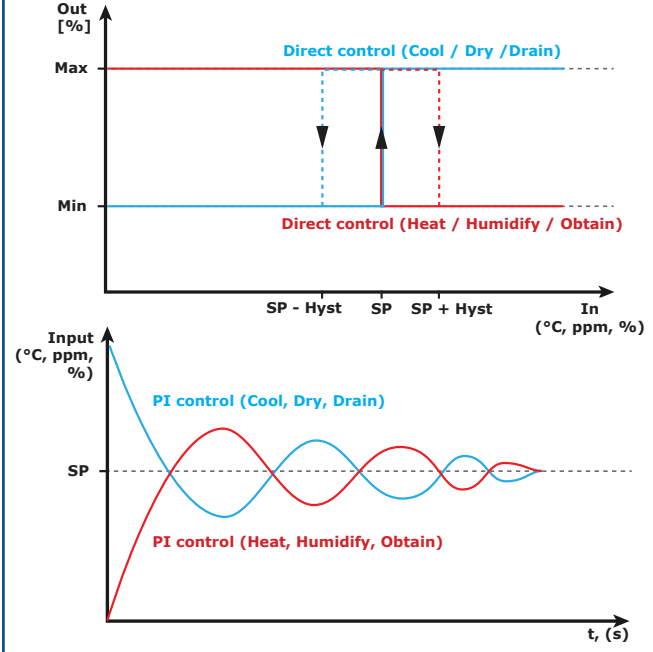


<b>L</b>	Power supply, line (110– 230 VAC ±10 % / 50–60 Hz)
<b>N</b>	Power supply, neutral (110– 230 VAC ±10 % / 50–60 Hz)
	Regulated output to motor, I <sub>max</sub> 1,5 A
	Regulated output to a single-phase AC motor
<b>A</b>	Modbus RTU (RS485), signal A
<b>/B</b>	Modbus RTU (RS485), signal /B
<b>Connections</b>	Cable cross section: max. 2,5 mm <sup>2</sup>

### Fixing and dimensions



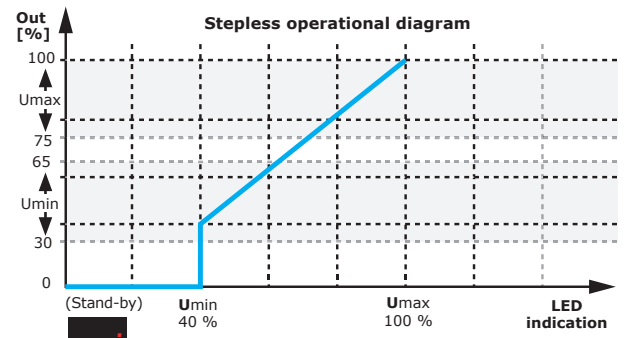
### Operational diagrams



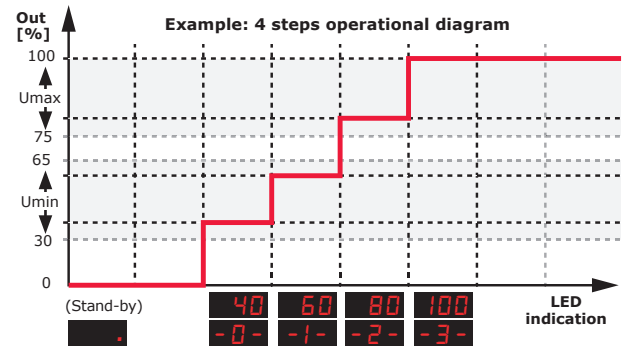
\* PI control can require adjustment of parameters, depending on the local circumstances.

Automatic mode

### Stepless operational diagram



### Example: 4 steps operational diagram



\* In the examples U<sub>min</sub> is set to 40% and U<sub>max</sub> to 100%

Manual mode

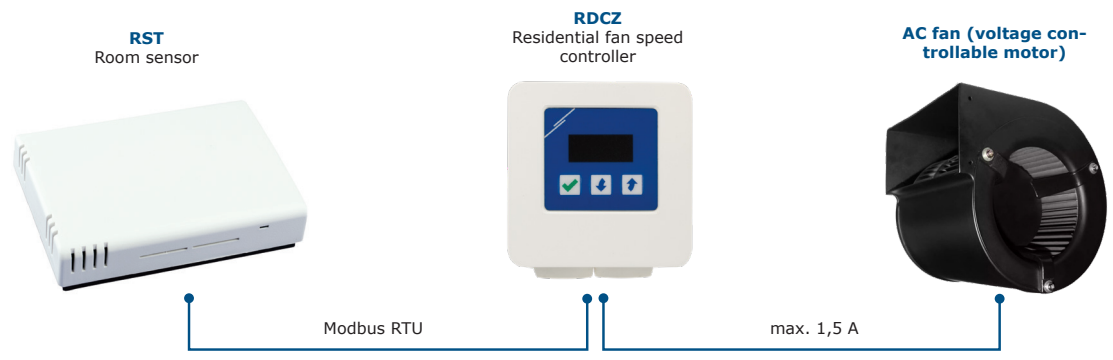
Legend	
<b>Stand-by</b>	Decimal point - OFF
<b>30–100</b>	Output value in percentage of U <sub>s</sub>
<b>Min</b>	Minimum output value (30–65 % of the output range)
<b>Max</b>	Maximum output value (75–100 % of the output range)
<b>Out</b>	Output value

**RDCZ**  
Residential fan speed controller

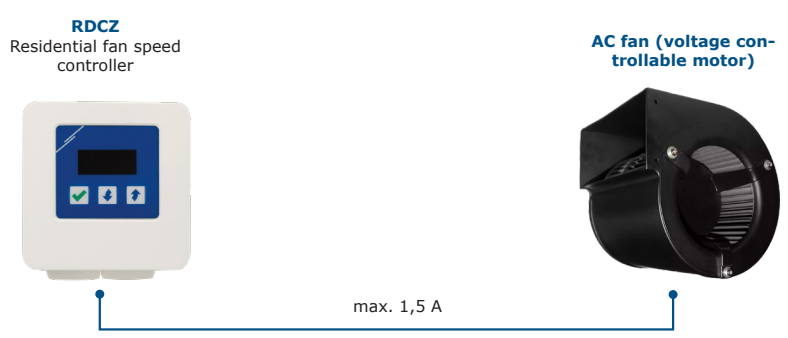


**Application examples**

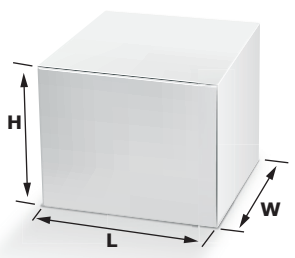
**Automatic mode**



**Manual mode**



**Packaging**



Article	Packaging	Length [mm]	Width [mm]	Height [mm]	Net weight	Gross weight
RDCZ9-15-WH RDCZ9-15-BK	Unit (1 pc.)	95	85	70	0,12 kg	0,15 kg
	Carton (10 pcs.)	492	182	84	1,20 kg	1,63 kg
	Box (60 pcs.)	590	380	280	7,2 kg	9,55 kg