



CONTROLS Energy Saving Up to 55%



Why Kruger?

KRUGER has been a leading innovator and manufacturer of residential, commercial and industrial ventilation solutions across Asia since 1985. Today with a direct presence in over 18 regions throughout Asia, world class R&D and manufacturing facilities, KRUGER are able to offer their customers unparalleled service and support at a local level. Our customers placed their trust in KRUGER.



Why use a KRUGER Ecowatt® Controls?

Energy is scarce and expensive. One of the main challenges for all device manufacturers is to produce evermore efficient devices to reduce unnecessary energy consumption.

KRUGER, a leader in the ventilation solutions presents the Ecowatt® Control system, which enables the control of ventilation systems based on demand with control parameters of Pressure, Airflow, Temperature, Humidity, CO₂, VOC to optimize ventilation systems based on actual ventilation requirements, minimizing power consumption.

Energy Saving Up to 55%



When using a Kruger Ecowatt® Controls to control ventilation system based on demand, a reduction of power consumption of up to 55% can be achieved.



- Commercial offices' average occupancy < 60%.</p>
- Traditional ventilation system consume power base on maximum occupancy.
- With Ecowatt® Controls significant energy savings can be achieved.

Principles of Ecowatt® Controls

Below is one of many example how can Ecowatt® controls reduce the energy consumption of ventilation systems. The airflow is regulated to meet the occupancy of the room. By reducing the airflow by only 20%, the consumption of electricity will be reduced by 50%.

If the ventilation system only needs to supply an 100% of the airflow for a few days each year, while the average is below 80% of the rated flow for the remainder of the year, the amount of energy saved is even greater than 50%.



Ecowatt® Control Products



Manual Speed Control



- Remote speed control.
- Enables the speed control of the fan continuously, manually and remote.
- Contact rating: 1A / 250Vac.

Model	IP Protection	Class	Operating Temperature Range	Dimensions LxWxH(mm)
REB-ECOWATT	IP44	II	-10°C to +50°C	80x68x80

Application & Wiring



Differential Pressure / Airflow Control



- S Integral proportional control by set point. Direct control output signal for eBNC fans or Ecowatt®-Drive.
- > This sensors are used to control the pressure of constant pressure and constant airflow.
- They allow the reading of the difference of pressures between two points and transform it into an analog signal suitable for the different control devices.
- Pressure Range: 0-2500 Pa
- Output Signal: 0-10VDC, 2-10VDC, 0-20mA, 4-20mA
- Supply Voltage: 24VAC, 50/60 Hz or 24VDC

Model	Electrical Supply	Maximum Power (VA)	Ø Connector (mm)	Voltage	IP Protection	Pressure Range	Dimensions LxWxH(mm)
TDP-S (Pressure Sensor)							
TDP-D (Pressure Sensor, with Display)	24VAC-24VDC	4	6.2	0-10 V 4-20 m∆	IP54	0-2500 Pa	91x75x36
TDP-PI (Pressure Sensor, with Display and Integral Proportional Control)				4 20 MA			



Proportional Control Element



- Control element for demand controlled ventilation systems in public, commercial residential building. it automatically modifies the fan speed to adapt it to the needs defined in the system, measured with sensors.
- It has three basic modes of operation:
 - Integral proportional control at constant pressure.
 - Proportional control with maximum demand criteria with multiple sensor input : temperature, CO₂ and relative humidity.
 - Minimum-Maximum control with three-sensor input: CO2, temperature, relative humidity or presence detectors (PIR).
- Output analog signal 0-10 VDC for EC motor.
- Output AC voltage variation 80-230VAC for single phase motor.

Model	Electrical Supply	Maximum Current (A)	Voltage	IP Protection	Operating Temperature Range	Dimensions LxWxH(mm)
CONTROL ECOWATT AC/DC	90-260 VAC 50/60Hz	-	0-10VDC	IP55	-10°C to +50°C	165x220x100
CONTROL ECOWATT AC/4A	230 VAC 50Hz	4	0-10VDC or 80-230VAC	1 55		1032202100

Application & Wiring



CO₂, Temperature and Humidity Sensor



- Ambient CO₂, Temperature and Relative Humidity Sensors with Display.
- CO₂ Range: 0-2000 ppm.
- Temperature Range: 0-50 °C.
- RH Range: 0-100%.
- Output Signal: 0-10 V.
- Power Supply: 24 VDC

Model	Electrical Supply	Power (VA)	Voltage	Height Installation	IP Protection	Range	Temperature Range	HR Range	Dimensions LxWxH (mm)
SCHT-AD	24VAC- 24VDC	5	0-10V	1,5-3,5 m	IP20	0-2000 ppm	0-50°C	0-100%	85x26x100

Application & Wiring



Humidity, CO₂ and VOC Control



- Intelligent sensor available in three different versions: CO₂, VOC and RH.
- 4 working modes: Relay output and Modbus communication (reading).
 - 0-10V output and Modbus communication (reading).
 - 2-10V output and Modbus communication (reading).
 - Full control via Modbus communication.
- Adjustable output set point.
- Air quality level indicator (3-LEDs diffuser).
- Adjustable diffuser intensity 3-LEDs.
- The RF version requires the receiver REC.AIRSENS RF.
- Power supply 100-240VAC 50/60Hz.

		Wired version	1					
Model	Electrical Supply	Power (W)	Relay	Analog Output	Lecture Range	IP Protection	Dimensions LxWxH(mm)	
AIRSENS-CO ₂	100-240 VAC	0.7W			450-2000 ppm (NDIR Technology)	IP30	122x23x89	
AIRSENS-VOC			3A 250 VAC	0-10 V 2-10 V	450-2000 ppm			
AIRSENS-RH	30,00112			2-10 V	0-100%			

Model	Electrical Supply	Power (W)	Relay	Analog Output	Lecture Range	IP Protection	Dimensions LxWxH(mm)
AIRSENS RF CO_2					450-2000 ppm (NDIR Technology)		
AIRSENS RF VOC	100-240 VAC	0.7\//		0-10 V	450-2000 ppm	IP30	122x23x89
AIRSENS RF RH	50/60Hz	0.7 W	3A 250 VAC	2-10 V	45-100%		
REC.AIRSENS RF					Up to 4 signals from AIRSENS RF units		135x31x77



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KRUGER

KRUGER Ventilation Group

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Edition 1 Printed in January 2021



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