



RUKS ENGINEERING LTD

ENERGY MANAGEMENT & IAQ DEVICE

SENSOR & CONTROLLER TO MINIMIZE VOC, ODOR & CIGARETTE SMOKE & REDUCE ENERGY CONSUMPTION BY HVAC SYSTEM

UL LISTED AS ENERGY MANAGEMENT SYSTEM

CONTROZONE CZ6 SC & CZ6 C

Watchdog of your Air Quality & Operating Cost

Made in Canada



 **UL LISTED** **US** UL Listed & CE Certified 

UL Listed as Energy Management Equipment to UL 916

Ruks ControZone CZ6 range of Sensor and or Controller offers reliable, efficient and cost effective solution to track and or control VOC in your indoor environment and reduce energy used by HVAC system. Duct or space mounting options offer total flexibility to suit all applications.

CZ6 SC SENSOR CONTROLLER

A watchdog of your air quality. The Sensor Module continuously tracks weighted average concentration of indoor VOC and odor. Delivers signal to built in Variable Load Controller. This provides variable voltage to modulate IAQ devices, to eliminate or minimize offending VOC, odor and cigarette smoke. LED lamps provide visual indication of prevailing VOC level. Fully factory wired in

one neat 18 G CRS Powder Coated Satin Finish enclosure. Only field wiring required are input and output power cables, and interlock wiring. All in one enclosure renders installation easy, economical and quick.

CZ6 CONTROLLER

Standalone Controller. Modulates input voltage 110 V (220 V) to variable voltage 0 to 110 V (0 to 220 V), based on input analog signal 0 to 10 VDC from VOC Sensor. Selector switch provides option to bypass voltage regulator, if full applied voltage is required. Fully factory wired in one neat, compact 18 G CRS Powder Coated Satin Finish enclosure. Installation is quick, easy, and cost effective.

- Use CZ6 SC or CZ6 C to Monitor, Modulate, or Control any IAQ device; Ruks Ozone Generators, Heat Recovery Wheels, Demand Load Ventilation, Fresh and Exhaust Fans and Dampers, to provide fine modulation.
- Use CZ6 SC or CZ6 C to provide improved IAQ, combined with reduced HVAC plant size and reduced operating cost. Savings achieved provide quick ROI.

CZ6 Series - Your Silent Partner in Quality & Economy



MODE OF OPERATION

CZ6 SC SENSOR CONTROLLER

Sensor Module responds to rapid changes in TVOC and provides variable 0 to 10 VDC analog signal. Factory preset signal strength to indicate 1 level for clean room and 3 levels of pollution. Adjustable sensitivity control provides flexibility to set baseline to customize user's requirements. Set sensitivity is retained in the event power is lost, or if system is turned off for maintenance. Sensor is suitable to read multiple VOC present indoor and deliver signal based on TVOC. HMOS sensor element is ideally suited for 24/7 online operation, and requires no recalibration. Provides 0 to 10 VDC analog signal for interface to BMS/BAS.

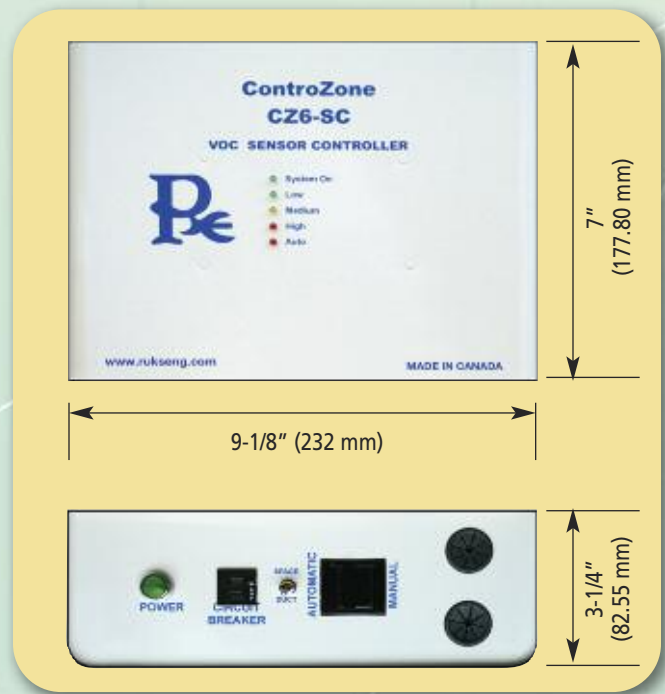
Controller Module accepts 0 to 10 VDC from Sensor Module and regulates input line voltage 110 V (220 V) to provide variable output voltage, proportionally to level of VOC detected. Variable voltage is used to modulate any IAQ device. Unit mounted Auto Bypass Switch and Power On Light offer operational flexibility.

Sensor and Controller modules are factory wired and housed in 18 G CRS Powder Coated Satin Finish enclosure. Minimizes field wiring to input and output power wiring and electrical interlock cables (if used).

CZ6 CONTROLLER

Identical to Controller Module described in CZ6 SC. Accepts 0 to 10 VDC input signal from VOC Sensor, and regulates input voltage 110 V (220 V) to variable output voltage, based on signal voltage. Unit mounted Auto Bypass Switch and Power On Light offer operational flexibility. Housed in 18 G CRS Powder Coated Satin Finish enclosure.

CZ6 SC AND CZ6 C ARE SUITABLE TO REDUCE ENERGY USED BY HVAC SYSTEM, AND OPERATE ANY IAQ DEVICE: OZONE GENERATORS, HEAT RECOVERY WHEELS, FRESH AIR, SUPPLY AIR OR EXHAUST AIR FANS AND DAMPERS, OR DEMAND LOAD VENTILATION.



CZ6 SC with dimensions



This equipment is not intended to be used as life saving device



PRODUCT SPECIFICATIONS

CZ6 SC

Size: 9-1/8" x 3-1/4" x 7" (H) / 232 mm x 82.55 mm x 177.80 mm (H)

Weight: 2.22 lbs (1 Kg)

Enclosure: 18 G CRS Powder Coated Satin Finish Enclosure

Mounting: Space or Duct

SENSOR MODULE

Sensor Type: Heated Metal Oxide Semi Conductor (HMOS)

Gases Detected: Total VOC (TVOC) in indoor space, air ducts, and air streams

Output Channels: 4 Channels; Clean, Low, Medium and High

Rating: Continuous operation in covered space
LED Lamps: 5 - System On, Low, Medium, High, Auto

Sensor Output Voltage Signal: 0 to 10 VDC Analog approximately proportional to TVOC detected

Initial Warm up Period: Approximately 3 Minutes

Sensor Life: In excess of 15 years (subject to proper use and care)

Response Time: Almost Instantaneous

Operating Range: 0 to 100% RH non condensing

Power Source to Sensor: Internally provided

BMS/BAS Interface: 0 to 10 VDC Analog

CONTROLLER MODULE

Input Signal: 0 to 10 VDC from Sensor Module

Input Voltage: 110 V, 1 Ph, 60 Hz (or 220 V, 1 Ph, 50 Hz)

Output: Variable 0 to 110 V (or 0 to 220 V)

Power: 150 W

Rating: Continuous Operation

Terminals: 3 for incoming power, 3 for variable voltage outgoing power to drive IAQ device, and 4 for electrical interlock

Terminal Block: Provided in the unit

Operating RH Range: 0 to 100% RH non condensing

3 LED Lamps: Power On, Auto, Manual

Power Source to Controller: Provided internally

Wiring between Sensor and Controller Modules: Provided internally

Field Wiring: Cables for Power In, Power Out, and Interlocks (if used)

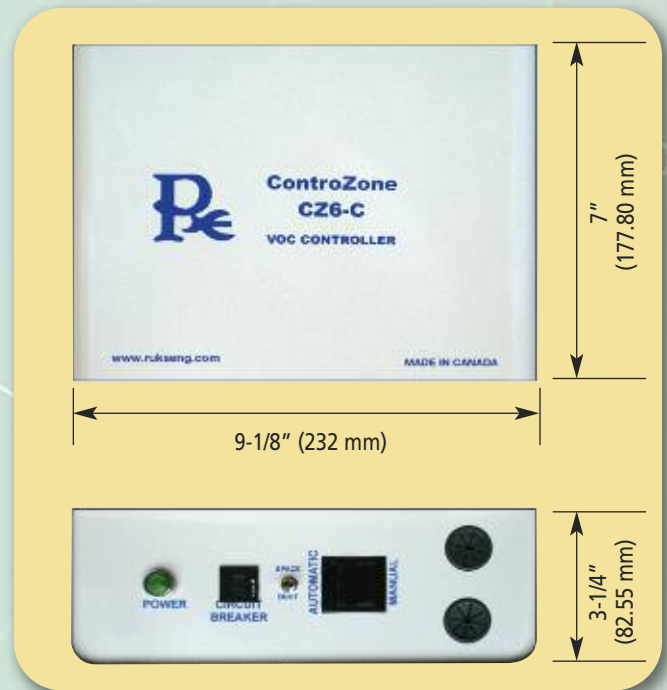
CZ6 C

Size: 9-1/8" x 3-1/4" x 7" (H) / 232 mm x 82.55 mm x 177.80 mm (H)

Weight: 2.22 lbs (1 Kg)

Enclosure: 18 G CRS Powder Coated Satin Finish Enclosure

All other relevant details are same as Controller Module of CZ6 SC



CZ6 C with dimensions



UL Listed & CE Certified



TECHNICAL SPECIFICATIONS

AUTO VOC SENSOR CONTROLLER CZ6-SC PRODUCT SPECIFICATIONS

1. Regulation of IAQ device or Fresh Air Damper shall be automatically modulated and controlled by Auto VOC Sensor and Variable Load Controller.
2. Sensor and Controller shall be rated for continuous operation, in air 0 to 100% RH non condensing.
3. Wiring between Sensor and Controller Modules, and for powering the Sensor element shall be factory provided within the enclosure.

SENSOR MODULE

4. Sensor element shall be HMOS, rated for continuous online, 24/7 uninterrupted operation, without requiring recalibration.
5. The VOC Sensor shall be capable of detecting broad range of commonly occurring VOC in indoor applications.
6. The Sensor shall provide 4 distinct signals with LED, one each for Clean, Low, Medium and High levels of concentration of the polluting VOC. It shall be possible to field adjust sensitivity of the sensor.
7. The sensor shall provide 0 to 10 VDC analog signal for interface to BMS/BAS.
8. In the event of power failure, or if the system is turned off, the Sensor shall retain the pre set sensitivity.

LOAD CONTROLLER MODULE

9. Controller Module shall be solid state, mounted alongside the Sensor Module, in the same common enclosure. It shall be fully factory assembled and wired.
10. Input voltage to controller shall be 120 Volts, 1 Ph, 60 Hz (or 220 to 240 Volts, 1 Ph, 50 Hz), load rating of 15 Amps on 120 Volts, or 7.5 Amps on 220 Volts (choose one).
11. Controller shall be provided with UL listed terminal block, switch to change between Automatic and Manual Operation.
12. Controller element shall have Current Limiter to prevent current spikes.
13. Controller element shall be housed in Epoxy Compound Housing and epoxy shall be flame rated to UL 94 VO.

14. As this is a switching device, the outer enclosure shall be metal to prevent harmonic spikes.
15. **The Sensor Controller shall be Listed to UL 916 Standard for Safety for Energy Management Equipment.**
16. **The Controller shall be CE Certified.**
17. The Equipment shall be of North American Manufacture, with parts and components from USA and Canada.

AUTO VOC CONTROLLER CZ6-C PRODUCT SPECIFICATIONS

1. Control of driven device shall be by automatically varying output voltage from Controller from 0 to 110 V (0 to 220 V), based on input analog signal voltage 0 to 10 VDC from VOC Sensor.
2. All parts and components of the Controller shall be housed in one neat, compact, enclosure.
3. Controller shall be solid state, fully factory assembled and wired.
4. Input voltage to controller shall be 120 Volts, 1 Ph, 60 Hz or 220 to 240 Volts, 1 Ph, 50 Hz (choose any one), Load rating of 15 Amps on 120 Volts, or 7.5 Amps on 220 Volts (choose any one).
5. Controller shall be provided with UL listed terminal.
6. LED to indicate Power On, and Change Over Switch for Automatic and Manual Bypass operations.
7. Controller shall be provided with switch to change between Automatic or Manual Mode of operation.
8. Controller element shall have Current Limiter to prevent current spikes.
9. Controller element shall be housed in Epoxy Compound Housing and epoxy shall be flame rated to UL 94VO.
10. As this is a switching device, the outer enclosure shall be metal to prevent harmonic spikes.
11. **The Controller shall be Listed to UL 916 Standard for Safety for Energy Management Equipment.**
12. **The Controller shall be CE Certified.**
13. The Equipment shall be of North American Manufacture, with parts and components from USA and Canada.



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Specifications and other details subject to change without notice

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