

SRC-600 Series Touchscreen Room Controllers

The SRC-600 series controllers have been designed for climate control in room spaces with modern slimline 3.5" colour touchscreen interface. The controllers have up to two heating and cooling temperature control stages, fan speed control, optional CO2 level and humidity control. The units can be in various climate control applications fan coil units, chilled ceiling and zone heating/cooling systems. The controllers have 3 x analogue 0-10V outputs, two external sensors inputs and one digital input. The devices provide accurate energy saving PI control and intuitive touchscreen interface.

The MOD models have built-in Modbus RTU communications and the BAC models provide BACnet MS/TP communications.



Features

- 24VAC/DC Power Supply
- 3.5" Backlit Touchscreen Display
- BACnet and Modbus Communication Models
- Flush Mounting in the UK or EURO Wall Mounting Box
- Attractive Slimline Designer Look
- Built-In Temperature Sensor and 2 x Remote NTC10 Sensors
- 3 x 0-10V Control Outputs
- Digital Input for Overrides

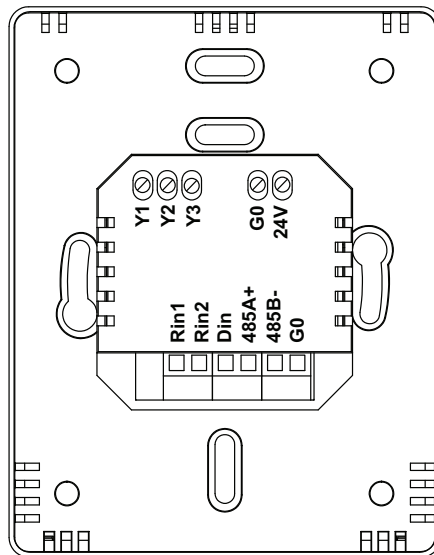
Model Type	Model	Description
	SRC-600-MOD	Modbus 3.5" Touchscreen Room Controller, 24Vac/dc Power Supply
	SRC-600-BAC	BACnet 3.5" Touchscreen Room Controller, 24Vac/dc Power Supply
	SRC-600-CO2-MOD	Modbus 3.5" Touchscreen Room Controller with CO2 Sensor, 24Vac/dc Power Supply
	SRC-600-CO2- BAC	BACnet 3.5" Touchscreen Room Controller with CO2 Sensor, 24Vac/dc Power Supply
	RH	Relative Humidity Option, 2%rH Accurate
	CE	Control Extension Option, Lights, Air Conditioning, Window (Blinds) Control
	SW-DCT-USB	Windows Device Configuration Tool with 1.8m USB Cable

Technical Data

Power Supply	Power:	24VAC/DC -10%/+15%
Display	Touchscreen	3.5" Backlit Touchscreen, 320 x 480 pixels, 1.6m colours
Signal Outputs	Analogue Outputs	3 x 0..10V < 5mA
Signal Inputs	Built-In Sensor	0..50°C (32..122°F) ±0.3°C @ 25°C
	External Sensor Inputs (RI1 & RI2)	2 x External NTC10K3 Sensors
	Digital Input	1 x Digital Input, Volt-Free Contact, Impedance <1KOhm
Optional Sensing Characteristics	Carbon Dioxide (CO ₂ Models)	
	Range	0...5000ppm CO ₂
	Accuracy	± 50ppm + 3% of the reading @ 25°C (@77°F)

	Technology	Auto Calibrating; Patented Non-Dispersive Infrared (NDIR)
	Non-Linearity	<1% FS
	Warm-Up Time	<20 seconds
	Response Time	2 minutes
	Humidity (RH Models)	
	Range	0..100%rH
	Accuracy	±2% rH (within 20..80% rh)
Communication	Modbus (-MOD models)	
	Protocol	Modbus RTU
	Interface	RS485; maximum 63 devices
	Addressing	1..247 via Touchscreen or Tool
	Communication	9k6/19k2/38k4/57k6 Baud; Parity None/Even/Odd, 1 or 2 Stop Bits (adjustable through Touchscreen or Tool)
	BACnet (-BAC models)	
	Protocol	BACnet MS/TP
	Interface	RS485; maximum 63 devices
	MAC Addressing	0..247 via Touchscreen or Tool
	Device ID	Default 651000 + MAC Address, Adjustable
Communication	9k6/19k2/38k4/76k8 Baud; Parity None/Even/Odd, 1 or 2 Stop Bits (adjustable through Touchscreen or Tool)	
Connections	Terminal Connections (Relay & Power Supply)	Solid and Stranded Cable Maximum Size: Solid: 0.05-2.5mm ² , Stranded: 0.05-1.50mm ² Rising Clamp: Size 2.5 x 2.2mm
	Terminal Connections (Low Voltage Terminals)	Solid and Stranded Cable; 90° Angle for Wiring Maximum Size: 0.05 to 1.5mm ² (EN ISO) / 14 to 30 AWG (UL) Rising Clamp: Size 2.5 x 1.9mm
Environmental Conditions	Operating	
	Temperature	0°C...+50°C (32..122°F)
	Humidity	0...95%rh (non-cond.)
	Storage	
	Temperature	-30°C...+70°C (-22..158°F)
	Humidity	0...95%rh (non-cond.)
Standards	CE Conformity	CE Directive 2004/108/EC (EMC) EN61000-6-3: 2001 (Generic Emission) EN61000-6-1: 2001 (Generic Immunity)
	Degree of Protection	IP30
Housing	Housing Material	ABS Plastics, Self Extinguishing, Silver and Black
	Mounting	Wall or Junction Box Mounting
	Dimensions	W86 x H120 x D29mm
	Weight	220g

Wiring Connections

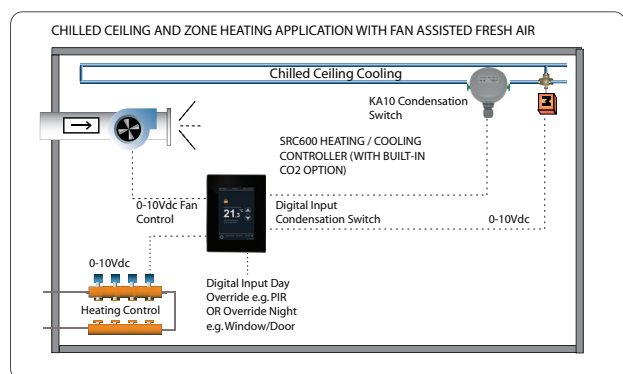
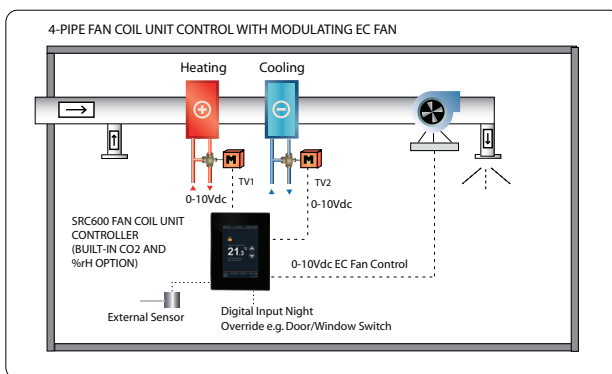


Y1	0..10Vdc Analogue Output 1
Y2	0..10Vdc Analogue Output 2
Y3	0..10Vdc Analogue Output 3
G0	0V Common
24V	24Vac/dc Supply
Rin1	Remote NTC10 Temperature Sensor Input
Rin2	Floor NTC10 Temperature Sensor Input
Din	Volt-Free Digital Input Contac
485A+	Modbus / BACnet MS/TP RS485 A+ Connection
485B-	Modbus / BACnet MS/TP RS485 B- Connection
G0	0V Common

WARNING: Switch off the power before any wiring is carried out.

Application Examples

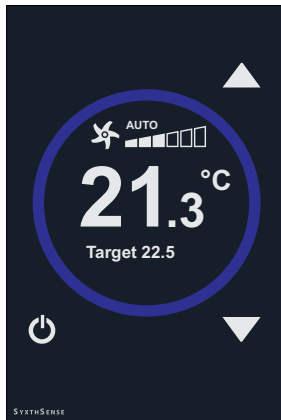
The below application diagrams show few examples of the SRC600 Climate Controller applications. The controller is highly versatile and can be easily configured for most room heating and cooling applications including fan coil unit control, chilled ceiling and zone heating control. Please refer to individual set up pages for further details or contact SyxthSense Sales Team for advice.



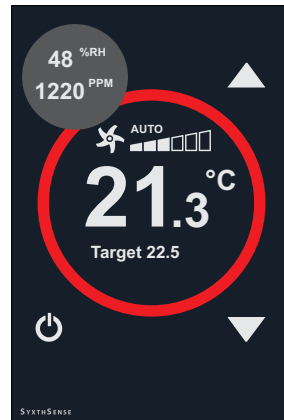
SRC-600 Controller User Interface

The figures below illustrate some of the SRC-600 controller user displays. The multi-colour LCD screen is touch sensitive, easy to adjust and illustrates clearly the plant status information.

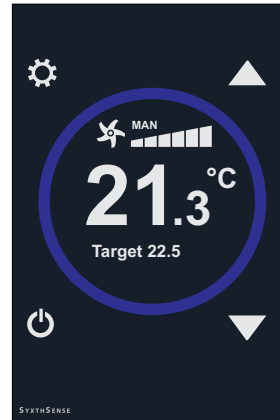
COOLING MODE, FAN AT 50%



HEATING MODE AND OPTIONAL SENSOR INFO BUBBLE



LINK TO ACTIVATE CLEANING OPTION



NIGHT MODE ACTIVATED



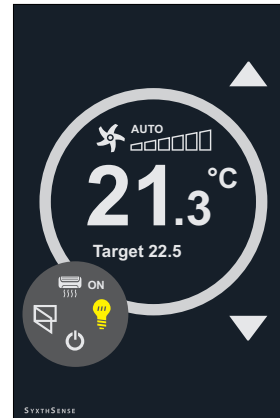
SCREEN LEGEND

- SWITCH OFF (DAY / NIGHT)
- COMMS MESSAGE
- CLEANING MODE
- LIGHTS ON
- AIR/CON ON
- WINDOWS STATUS
- FAN SPEED AND MODE
- SCREEN LOCKED
- ERROR
- NIGHT MODE
- SHOW OPTIONS (WHEN NO INFO BUBBLE I.E. CLEANING MODE ONLY)

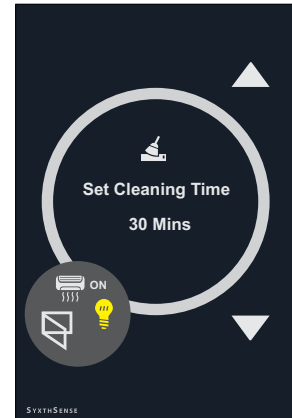
HEATING/COOLING OFF, CLEANING TIME INFO BUBBLE



WITHIN DEADZONE AND CE OPTIONS IN INFO BUBBLE



TOUCH INFO BUBBLE (MULTIPLE TIMES TO ROTATE) FOR ADDITIONAL OVERRIDES AND INFO (CE MODEL)



SENSOR INFO BUBBLE -CONTENT CHANGES BASED ON STATUS AND CONFIGURATION (CO2 and RH MODELS)

- HUMIDITY AND CO2 READING
- CO2 READING
- CO2 AMBER ALARM, FLASHING PPM
- CO2 RED ALARM, FLASHING PPM

SETPOINT ADJUSTMENT

STANDARD MODEL: OPTIONS WHEN CLEANING MODE IS ENABLED

CE MODEL: AVAILABLE SETTINGS DEPEND ON CONFIGURATION

User Adjustments

Through the touchscreen the user can operate the controller. The following adjustments are available in the normal user mode:

- Temperature Setpoint Adjustment
- Overriding the controller to Night Mode (Off Button)
- Adjusting the Fan Speed Manually via Fan Icon
- Activating Cleaning Mode (if enabled)

With Control Extension (CE) Product Option

- Overriding the Lights On (network message only, or analogue output)
- Overriding the Air Conditioning On (network message or analogue output)
- Overriding Window Blinds / Window Position (0..100%, network message or analogue output)

Main Temperature Control Loop Operation

The controllers can have up to 2 heating stages and up to 2 cooling stages (as default one heating stage and one cooling stage), and can also carry out automatic change-over from heating to cooling via digital input / temperature measurement / network.

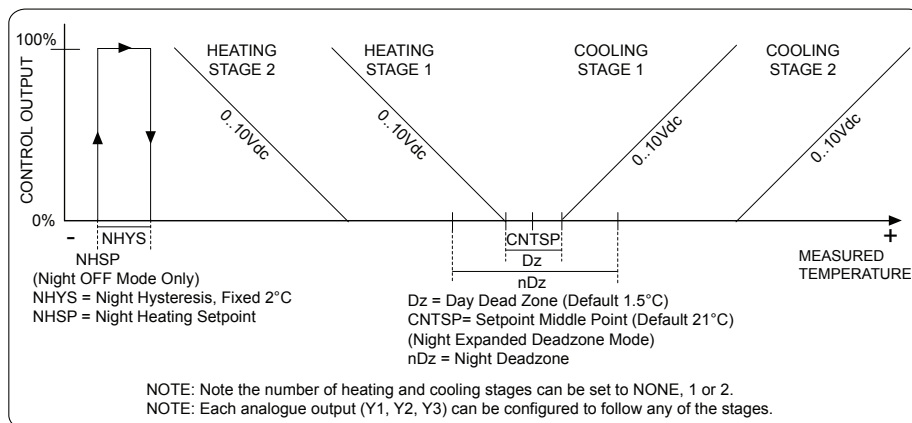
This allows various control configurations:-

- One/Two Stage Heating Control
- One/Two Stage Cooling Control
- One/Two Stage Heating and One/Two Stage Cooling Control
- One Stage Heating/Cooling Control (Change-Over)

The controller modulates the heating and cooling demand outputs according to the calculated setpoint and the current temperature. The control can be either P-control or PI-control.

As default, heating stage 1 output is linked to Y1 for fully modulating 0..10Vdc control, cooling stage 1 is linked to analogue output Y2 and EC Fan to analogue output Y3.

Please note that it is possible to set the control loop outputs to direct/reverse, which reverses the control output (valve) running direction (valve drives from 100% to 0%). This can be configured individually for each stage in the Configuration Tool.



Between heating and cooling stage 1 is a control deadband. This prevent rapid switching between heating and cooling.

Day and Night Control

The controller has Day and Night operation modes. When in Day mode the control loop operates with the (Day) Deadzone value. In the Night time the SRC600 controls with the Night Deadzone, if the night mode has been configured to operate in the Expanded Deadzone mode. If in Night Off mode has been enabled the outputs are Off unless the temperature drops below the Frost Setpoint (8°C, adjustable). In this case the Heating Loop Stage 1 and 2 outputs are 100% until the temperature reaches Frost Setpoint + 2°C.

In the Night Mode the LCD display shows the Night Icon (half moon icon), and all buttons are hidden. The unit is switched back to Day mode by touching anywhere on the screen.

Night/Day Control Activation (Digital Input, Network)

The controller can be switched to operate between DAY MODE / NIGHT MODE via the communication bus or via the digital input (volt-free contact).

- In the PIR MODE the controller DAY MODE is activated when the digital input is closed. If the digital input opens, the controller returns to NIGHT MODE (automatic control) after an adjustable time delay
- In the WINDOW SWITCH MODE the controller goes to NIGHT MODE if the digital is open. If the digital input closes, the controller returns to DAY MODE (automatic control) after an adjustable time delay. This can be, for example, used for window contacts or door cards.
- In the CONDENSATION SWITCH MODE, the cooling stages are disabled when the digital input closes.

Local overrides have priority over the communication network. Condensation switch mode has priority over the PIR mode. The PIR mode has priority over the window switch mode.

High/Low Limit Control (Reset Control)

If an external NTC10 sensor is fitted (to Rin1 or Rin2) and the corresponding input has been enabled, the controller can carry out high limit and/or low limit control. In high limit control, if the external temperature exceeds the High Limit setpoint, the main control setpoint is reduced by the amount set in the Limit Ratio. E.g. if the Limit Ratio is 2, every degree that the external temperature exceeds the High Limit setpoint, the main setpoint is reset by 2 degrees.

The Low Limit control works in reverse. If the external temperature drops below the Low Limit setpoint, the main control setpoint is increased by the amount of the ratio for every degree below the Low Limit setpoint.

The current calculated setpoint is available from display, via the network or via the DCT configuration tool.

External Sensor Input 1 and Input 2 (Rin1 & Rin2)

The external sensor inputs Rin1 and Rin2 can be configured with the following options:

- Temperature measurement for the main temperature control loop (NTC10 sensor)
- Floor temperature measurement for the min/max temperature reset control
- As network input for NCT10K3 sensor measurement
- As temperature measurement to switch between heating and cooling modes (summer/winter)
- As a digital status measurement the over the communication network
- To disable the Cooling Stage when active using on/off signal

Digital Input

The digital input can be configured to the following functions:-

- Override Day (see DAY/NIGHT CONTROL ACTIVATION section, PIR MODE)
- Override Night (see DAY/NIGHT CONTROL ACTIVATION section, WINDOW SWITCH MODE)
- Disabling the Cooling Stage when active (CONDENSATION SWITCH MODE)
- Switching between HEATING and COOLING modes
- Boosting heating stage 1 or cooling stage 1 to 100% (e.g. using external thermostat)
- Boosting fan control loop or CO2 control loop to 100%
- As a status measurement over the communications network

Analogue Outputs

The controller has three analogue 0-10Vdc outputs that are typically linked to the control loop outputs. The following list states the possible options:

- As a network 0-10Vdc output variable
- Linked to the Heating Stage 1, Heating Stage 2, Cooling Stage 1 or Cooling Stage 2 Output
- As modulating EC Fan Output
- As CO2 control loop output (with CO2 option)
- As humidification or de-humidification output (with RH option)
- As maximum VAV (maximum of the cooling stage 1 and CO2 loops)
- As maximum Fan (maximum of the temperature control loop and fan control loop)
- Manual Light control output (10Vdc when ON)
- Manual AC control output (10Vdc when ON)
- Manual Window control output (0-100% Adjustable)

Fan Speed Control

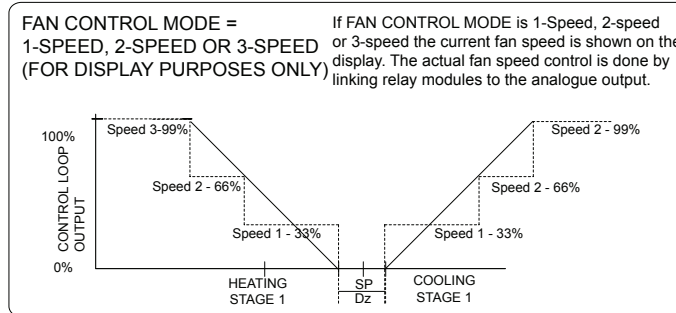
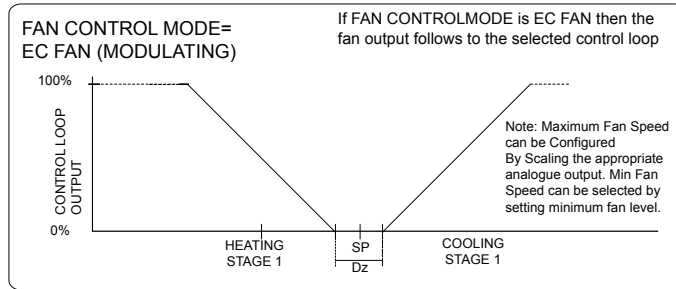
Fan speed control logic adjusts the fan speed based on the demand. The fan speed control can be set to operate in 1-speed, 2-speed, 3-speed, or EC fan control modes. The settings affect the display and the fan control output operation. By pressing the fan icon the user can adjust the fan speed (configuration option). If the user has adjusted the fan speed, "MAN" is displayed next to the fan speed symbols.

The fan speed control type (EC fan, 0-1, 0-1-2, 0-1-2-3) is configured in the Configuration Parameters.

The fan is as default controlled based on the heating stage 1 and cooling stage 1. It is possible to change the fan control source to follow also only the heating stage 1, or only the cooling stage 1, heating/cooling stage 2, heating stage 2, cooling stage 2, humidification, de-humidification or CO2 loop.

Note: In the Expanded Night Deadzone mode the fan speed is also controlled based on the Heating Stage 1 and/or Cooling Stage 1 demand.

Note: When the fan mode is set to 0-1, 0-1-2, 0-1-2-3 for display, then external fan control modules are used to drive the 3-speed fan motors.



EC Fan Control

When controlling the fan it is possible to set the minimum fan speed level. The fan speed will not drop below the min level in the selected fan control active stage(s) (heating1, cooling2 etc.). When in the deadzone or in other control stages the fan speed drops to 0%.

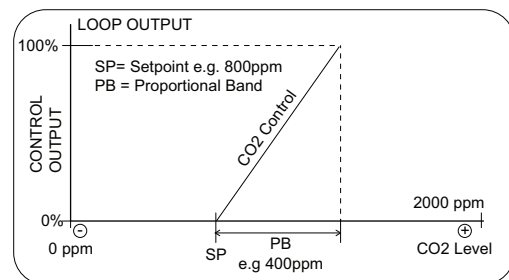
If the EC Fan is required to be running at the Deadzone, please use the Output Limitation/Scaling.

In the Expanded Night Mode the EC fan output operates as in the Day mode. In the Night Off mode the fan speed is set at 0%.

CO2 Sensor Control Loop Operation (SRC-600CO2 Models)

The CO2 models can measure and control the CO2 level. This can then be used in demand based control applications. The CO2 control output can then be configured to linked to any of the physical control outputs Y1, Y2 or Y3.

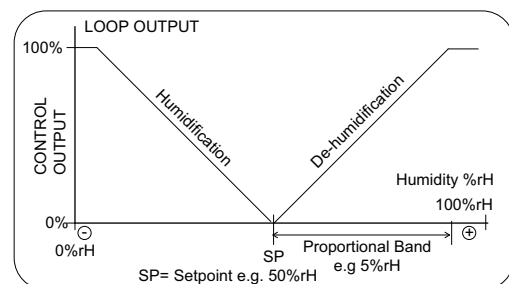
The CO2 control loop output corresponds to the CO2 setpoint and the CO2 proportional band. If configured as Direct Control (typical), then if the CO2 level increases above the setpoint the loop output starts to modulate to 100%. When the CO2 level is the amount of the Proportional Band above the setpoint, the loop output is 100%. The configuration is done via the configuration parameters. The CO2 control loop can also be configured to operate as Proportional + Integral control by changing the Integral Action Time from 0 to a required value. The actuator direction can be changed via Output Direction parameter (Direct, Reverse).



In the Night Off mode the CO2 loop output is set to 0%. In the Expanded Deadzone Night mode the CO2 loop operates as in the day mode.

Humidity Control Loop Operation (-RH option)

The RH models can measure and control the relative humidity level. This can then be used in demand based control applications to increase the fresh air supply e.g. in the high humidity conditions. The control loop has both de-humidification and humidification outputs that can be linked to any of the physical control outputs Y1, Y2, or Y3. The direction of the both outputs can also be reversed to driver the actuators 100-0% instead of 0-100%.



Output Scaling / Output Limitation

Each of the analogue outputs (Y1,Y2,Y3) can have

- Output minimum voltage (percentage)
- Output maximum voltage (percentage)

The connected control loop output 0..100% is then scaled from minimum voltage to maximum voltage.

For example in the EC fan control, if the fan is required to run always at minimum level, the minimum control output voltage can set to 10% (1V) and the maximum output 70% (7V). In this case the output is 1V when the control loop output is less than 10% and the output is 7V when the control loop output is more than 70%. This allows maximum noise levels to be limited and the fan to have a minimum fan speed. In this example the fan is running at 10% within the deadzone as the output maintains the minimum level. If the fan is required to be off in the deadzone, please use the Min Active Level in the Fan Speed Control section.

The values are available via the communication network from network master read/write. This allows them to be used e.g. in the natural ventilation application limit the window damper position to different values in winter and summer.

AntiJAM Valve Exercise Function

If the AntiJAM function is enabled the controller monitors for inactivity. If the control outputs have been fully closed or fully open more than the AntiJAM period, the controller will open/close the outputs to by 30% for a short period of time. The AntiJAM function is enabled through the configuration parameters or via the DCT configuration tool by selecting the required AntiJAM period by days.

Alarm Display

The SRC600 controller provides three Alarm modules each of which can be configured to detect and display Alarm condition on either the CO2, Humidity or Temperature Sensor (internal or external depending on which is being used). The alarm function can be disabled by setting the alarm source as "NONE". Alarms are disabled by default.

Each Alarm has three alarm states – No Alarm (White/No Background), Amber and Red.

HIGH LIMIT ALARM

If the Red threshold is set higher than the amber threshold:

If Sensor >=Amber Threshold; Alarm = amber

If Sensor >= Red Threshold; Alarm = Red

Hysteresis acts to prevent a return to a lower alarm level until the Sensor value falls to a Threshold - Hysteresis

LOW LIMIT ALARM

If the Amber threshold is set higher than the Red Threshold then:

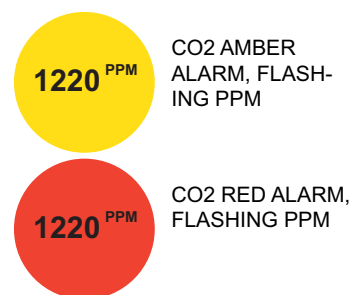
If Sensor <= Amber Threshold; = amber

If Sensor <= Red Threshold; Alarm = Red

Hysteresis acts to prevent a return to a lower alarm level until the Sensor value rises to a Threshold + Hysteresis.

If one or more alarms are in a RED state then the RED background is turned on and the associated unit icons will flash on the display to indicate which sensor is causing the alarm(s).

If no red alarms exist Amber Alarms are processed instead and if any exist the AMBER background is turned on the associated sensor units flashed.



Configuration Parameters

The SRC600 controllers have the following configuration parameters accessible via the configuration tool.

INPUTS		
Parameter Name	Description	Range
Internal Sensor Offset	One Point Internal Temperature Calibration Field	-10.0..+10.0°C/°K (Default 0°C)
RIn1 External Sensor Offset	One Point External Temperature Calibration Field	-10.0..+10.0°C/°K (Default 0°C)
RIn2 External Sensor Offset	One Point External Temperature Calibration Field	-10.0..+10.0°C/°K (Default 0°C)
CO2 Sensor Offset	CO2 Sensor Calibration	-500...+500 ppm
Humidity Sensor Offset	Humidity Sensor Calibration	-5...+5%rH

INPUTS		
Parameter Name	Description	Range
Din Function	Digital Input 1 Function	0 = Override Day- Default 1 = Override Night 2 = Disable Cooling 3 = Heating/Cooling Mode 4 = Boost Heating Stage 1 5 = Boost Cooling Stage 1 6 = Boost Fan Loop 7 = Boost CO2 Loop 8 = Network
Din Delay	Delay Time Setting for Digital Input 1	0..28800 Seconds (Default 0s)
Rin1 Function	Resistive Input 1 Function	0 = NTC10 Main Loop 1 = Floor Sensor 2 = NTC10 Network (Default) 3 = NCT10 Summer / Winter 4 = Digital Input (Network) 5 = Disable Cooling (On/Off)
Rin2 Function	Resistive Input 2 Function	0 = NTC10 Main Loop 1 = Floor Sensor (Activates Reset Control) 2 = NTC10 Network (Default) 3 = NCT10 Summer / Winter 4 = Digital Input (Network) 5 = Disable Cooling (On/Off)

OUTPUTS		
Parameter Name	Description	Range
AO1 (Y1)	Analogue Output Y1 Mode	0 = Network Value 1 = Heating Stage 1 (Default) 2 = Heating Stage 2 3 = Cooling Stage 1 4 = Cooling Stage 2 7 = Modulating Fan (EC) 8 = CO2 Control 9 = Maximum VAV 10 = Maximum Fan 11 = Humidification 12 = De-humidification 13 = Light Control 14 = AC Control 15 = Window Control
AO2 (Y2)	Analogue Output Y2 Mode	0 = Network Value 1 = Heating Stage 1 2 = Heating Stage 2 3 = Cooling Stage 1 4 = Cooling Stage 2 7 = Modulating EC Fan (Default) 8 = CO2 Control 9 = Maximum VAV 10 = Maximum Fan 11 = Humidification 12 = De-humidification 13 = Light Control 14 = AC Control 15 = Window Control

OUTPUTS		
Parameter Name	Description	Range
AO3 (Y3)	Analogue Output Y3 Mode	0 = Network Value 1 = Heating Stage 1 (Default) 2 = Heating Stage 2 3 = Cooling Stage 1 4 = Cooling Stage 2 7 = Modulating Fan (EC) 8 = CO2 Control 9 = Maximum VAV 10 = Maximum Fan 11 = Humidification 12 = De-humidification 13 = Light Control 14 = AC Control 15 = Window Control
AO1 (Y1) Minimum Output	Analogue Output Y1 Minimum Value	0..100%(0% = default)
AO1 (Y1) Maximum Output	Analogue Output Y1 Minimum Value	0..100% (100% = default)
AO2 (Y2) Minimum Output	Analogue Output Y2 Minimum Value	0..100%(0% = default)
AO2 (Y2) Maximum Output	Analogue Output Y2 Minimum Value	0..100% (100% = default)
AO3 (Y3) Minimum Output	Analogue Output Y3 Minimum Value	0..100%(0% = default)
AO3 (Y3) Maximum Output	Analogue Output Y3 Minimum Value	0..100% (100% = default)
VALVE EXERCISE (AntiJAM)		
Anti-Jam Timeout	Valve Exercise Monitoring Period.	0 = Disabled (Default) 1-14 days

Control Parameters		
Parameter Name	Description	Range
Setpoint	Setpoint Middle Position.	12..86°C/°F (Default 21.0°C)
Setpoint Adjust Max	Temperature Setpoint Maximum Adjustment	0.0...20°C/°F (Default 3.0)
Setpoint Adjust Min	Temperature Setpoint Minimum Adjustment	-20.0...0°C/°F (Default -3.0)
Setpoint Adjustment Save	Saves the user Setpoint Adjustment Automatically to Flash	0 = Do Not Save (Default) 1 = Save Setpoint Adjustment
Setpoint Adjustment Reset	Resets the User Setpoint Adjustment on Night to Day Transition via Bus	0 = Retain Current SPA (Default) 1 = Reset Setpoint Adjustment
Proportional Band	Proportional Ban	1.0..50.0 °C/°F (Default 4.0)
Integral Action Time	Integral Action time of the control loop. Set to 0 to disable.	0..1,200 seconds (Default 600s)
Deadzone	Deadzone Between Heating and Cooling Stages in Day Mode	0.0..6.0°C/°F (Default 1.5°C)
Heating Stages	Number of Heating Stages	0 = None 1 = 1-Stage (Default) 2 = 2-Stages
Heating Stage 1 Direction	Heating Stage 1 Direction	0 = Reverse (Default) 1 = Direct
Heating Stage 2 Direction	Heating Stage 2 Direction	0 = Reverse (Default) 1 = Direct
Cooling Stages	Number of Cooling Stages	0 = None 1 = 1-Stage (Default) 2 = 2-Stages
Cooling Stage 1 Direction	Cooling Stage 1 Direction	0 = Reverse 1 = Direct (Default)
Cooling Stage 2 Direction	Cooling Stage 2 Direction	0 = Reverse 1 = Direct (Default)
Night Mode	Night Control Mode	0 = Expanded Deadzone (Default) 1 = Night OFF Mode
Night Deadzone	Deadzone Between Heating and Cooling Stages in Night Mode (Expanded Deadzone Mode)	0.0..40.0°C/°F (Default 6.0°C)
Night Frost Setpoint	Night Frost Setpoint (Night OFF Mode)	0.0...71.0°C/°F (Default 8.0°C)
RESET CONTROL (HIGH AND/OR LOW LIMIT CONTROL)		
Enable	Enable Reset Control	Disabled/Enabled
High Limit Setpoint	High Limit Setpoint	12..86°C/°F (Default 35.0°C)

Control Parameters		
Parameter Name	Description	Range
Low Limit Setpoint	Low Limit Setpoint	12..86°C/°F (Default 16.0°C)
Limit Ratio	Low/High Limit Ratio	0-5 (0=Disabled, Default)
CO2 CONTROL		
CO2 Control Setpoint	CO2 Setpoint	0..5000ppm (Default 1,000 ppm)
CO2 Proportional Band	CO2 Proportional Band	10..5000 ppm (Default = 300 ppm)
CO2 Control Integral Action	Integral Action time of the CO2 control loop. Set to 0 to disable.	0..10,000 seconds (Default 0)
Output Direction	Direction of the CO2 control actuator.	0 = Reverse Acting 1 = Direct Acting (Default)
HUMIDITY		
Humidity Control Setpoint	Humidity Setpoint	0.0...100.0 %rH (Default 50%)
Humidity Proportional Band	Humidity Proportional Band	0.1...100.0 %rH (Default 20.0%)
Humidity Control Integral Action	Integral Action time of the humidity control loop. Set to 0 to disable.	0..10,000 seconds (Default 0)
Humidification Output Direction	Direction of the humidification output (actuator direction, Direct = 0..100%, Reverse = 100..0%).	0 = Reverse Acting 1 = Direct Acting (Default)
De-Humidification Output Direction	Direction of the dehumidification output (actuator direction, Direct = 0..100%, Reverse = 100..0%).	0 = Reverse Acting 1 = Direct Acting (Default)
FAN SPEED CONTROL		
Fan Speed Mode Selection	Selecting the Fan Speed Mode	0 = 0..100% Modulating (Default) 1 = 0 - 1 (Display) 2 = 0 - 1 - 2 (Display) 3 = 0 - 1 - 2 - 3 (Display) 4 = None
Fan Speed By	Fan Speed Control Source	0 = Heating 1 and Cooling 1 Stage (Default) 1 = Heating Stage1 2 = Cooling Stage 1 3 = Heating and Cooling Stage 2 4 = Heating Stage 2 5 = Cooling Stage 2 6 = CO2 7 = Humidification 8 = De-humidification
Min Active Level	Fan Speed Minimum Active Level	0...100 %rH (Default 20%)

Alarm and Display Parameters		
Parameter Name	Description	Range
DISPLAY		
Temperature Units	Temperature Unit Selection	0 = Celsius (Default) 1 = Fahrenheit
LCD brightness	Brightness of the LCD white backlight.	Off - 10% to 100% (Default Off)
Night Mode Button (Off Icon)	Hide Night Mode Button	0 = Off (Default) 1 = On (Hide User Button)
Fan Speed Button	Activate Fan Speed Ling on the Fan Icon	0 = Off 1 = On (Default)
Communications Icon	Hide Communications Icon	0 = Off (Default) 1 = On
Cleaning Mode	Activate Cleaning Mode	0 = Off 1 = On
Cleaning Mode Timer	Cleaning Mode Timer	0..180 minutes (Default 30)
Lighting Control (CE Model Only)	Activate Lighting Control	0 = Off 1 = On 2 = Modulating 0..100%
Air Conditioning Control (CE Model Only)	Activate AC Control	0 = Off 1 = On
Windows Control (CE Model Only)	Activate Windows Control	0 = Off 1 = On 2 = Modulating 0..100%
ALARMS		

Alarm and Display Parameters		
Parameter Name	Description	Range
Alarm 1 Source	Source for the Alarm Display	0 = CO2 Sensor 1 = Temperature 2 = Humidity 3 = None (Default)
Alarm 1 Amber Threshold	Alarm 1 Amber Backlight Switching Point	0..5000 (Default 0)
Alarm 1 Red Threshold	Alarm 1 Amber Backlight Switching Point	0..5000 (Default 0)
Alarm 1 Hysteresis	Hysteresis for Alarm 1	0..5000 (Default 0)
Alarm 2 Source	Source for the Alarm Display	0 = CO2 Sensor 1 = Temperature 2 = Humidity 3 = None (Default)
Alarm 2 Amber Threshold	Alarm 2 Amber Backlight Switching Point	0..5000 (Default 0)
Alarm 2 Red Threshold	Alarm 2 Amber Backlight Switching Point	0..5000 (Default 0)
Alarm 2 Hysteresis	Hysteresis for Alarm 2	0..5000 (Default 0)
Alarm 3 Source	Source for the Alarm Display	0 = CO2 Sensor 1 = Temperature 2 = Humidity 3 = None (Default)
Alarm 3 Amber Threshold	Alarm 3 Amber Backlight Switching Point	0..5000 (Default 0)
Alarm 3 Red Threshold	Alarm 3 Amber Backlight Switching Point	0..5000 (Default 0)
Alarm 3 Hysteresis	Hysteresis for Alarm 3	0..5000 (Default 0)

Communications Options		
Parameter Name	Description	Range
Modbus Baud Rate	Modbus Baud Rate	0 = 9600 (Default) 1 = 19200 2 = 38400 3 = 57600
Modbus Parity	Modbus Parity	0 = None (Default) 1 = Odd 2 = Even
Stop Bits	Stop Bits	0 = 1 Stop Bit (Default) 1 = 2 Stop Bits
Address	Modbus Address	0..247 (Default 1)
Defaults	Reload Defaults	0 = Off 1 = Reload Defaults

Parameter Storage

The configuration parameters are stored in the non-volatile memory. When the changes are carried out via the Configuration Tool or display, the parameters are stored in the non-volatile memory when the controller returns to a normal display mode. If the changes are carried out over the network (Modbus), then "NonVol Update" flag is required to be forced on to save the changes. When configured via the display, when the parameters are stored after the timeout or exit button.

Dimensions (non CO2 Models)

